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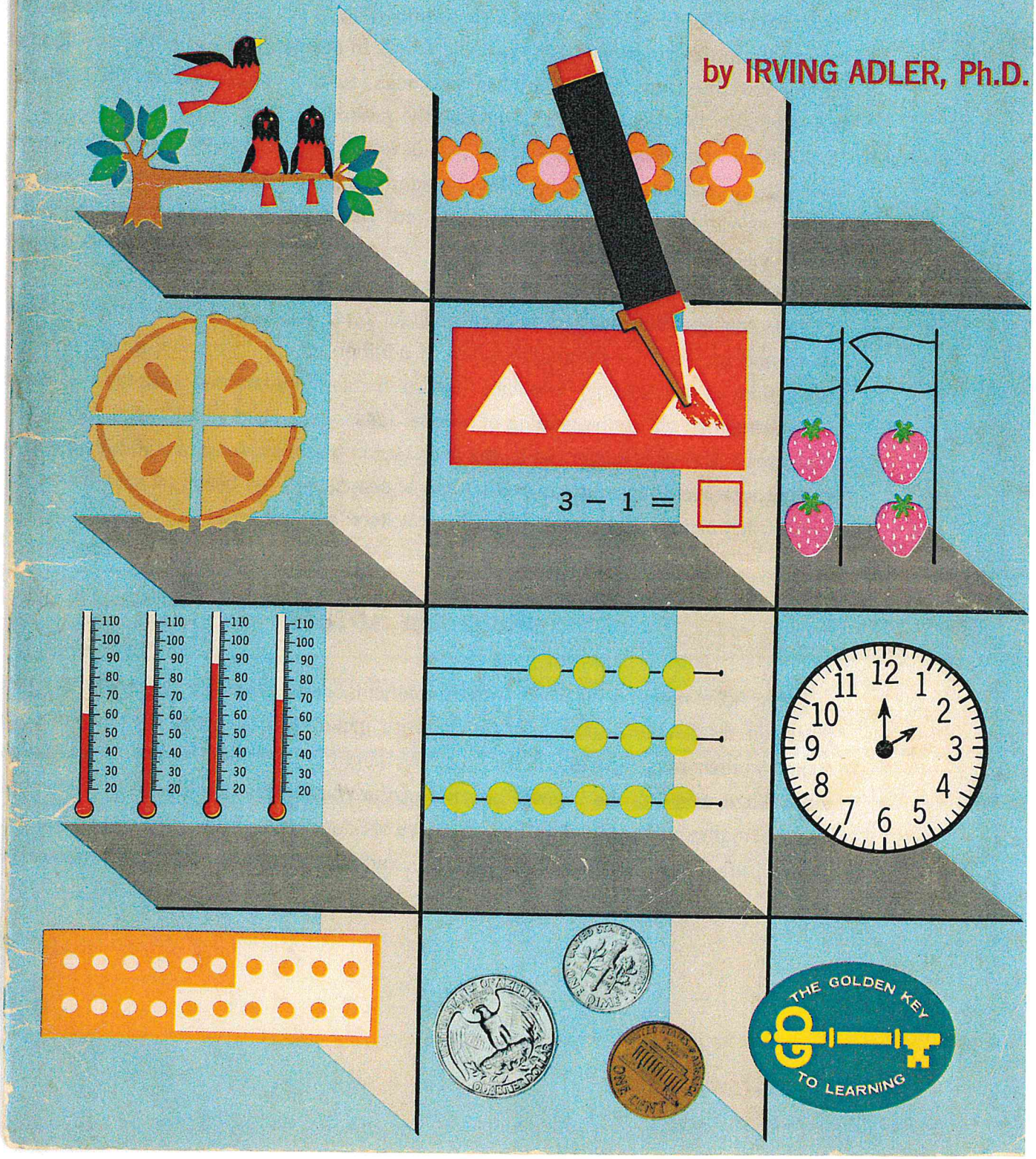
# MATHEMATICS–GRADE 2

## Mastering Addition and Subtraction

*A Workbook with Self-Teaching Text and Learning Exercises*

by IRVING ADLER, Ph.D.



## TO THE PARENT AND TEACHER

MATHEMATICS—GRADE 2 is based on a careful study of the methods used to teach arithmetic both in this country and abroad. The aim is to develop understanding as a foundation for skill. The book includes the best practices found anywhere and has the freshness and originality that are characteristic of all the author's books.

This book, the second in a series of six , develops the meaning of numbers up to one hundred. It introduces, through a series of graded steps, the addition of two-place numbers. Several ways of thinking out sums are employed. Visual aids are used to stress the underlying meaning of addition and subtraction. As soon as possible, the child is given the opportunity to think a problem through in his head.

Other concepts and skills developed include: zero, addition and subtraction of zero, halves and fourths, the commutative law of addition, counting money, making change, telling time at quarter-hour intervals, reading a thermometer, and reading a calendar.

To strengthen his understanding of number ideas, each child should work with groups of objects in the ways suggested by the exercises in the book. A kit of suitable objects for this purpose should include: several strings of beads, with ten beads on each string; fifty pennies; ten nickels; five dimes; quarters; checkers: and buttons.

## ABOUT THE AUTHOR

Irving Adler received his Ph.D. in pure mathematics at Columbia University. He was a teacher in the New York schools for twenty years, including six years as chairman of a high-school mathematics department. Dr. Adler has taught at Columbia University and Bennington College, and was the keynote speaker at the Washington conference of state supervisors of mathematics, called by the U. S. Office of Education in June, 1961. He is the author of about fifty books on mathematics, science, and education, and co-author of thirty more.

# MATHEMATICS–GRADE 2

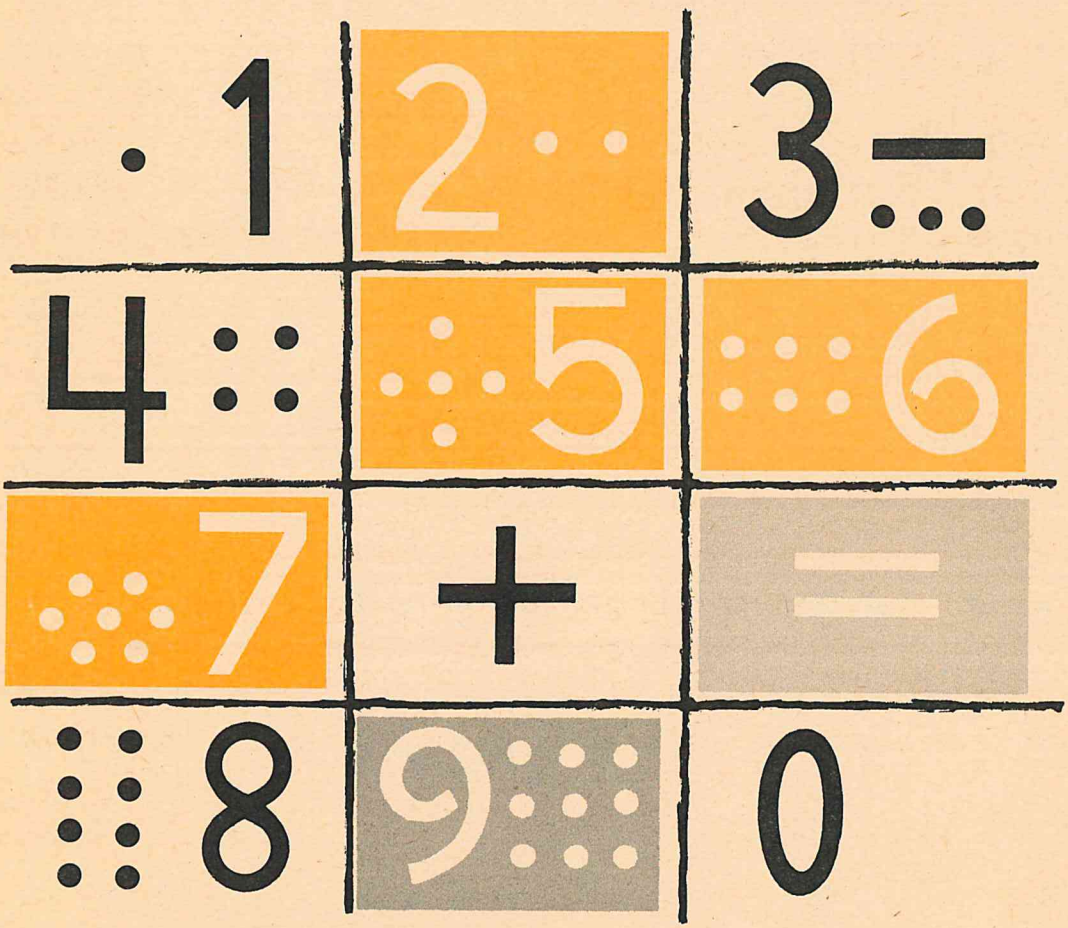
## Mastering Addition and Subtraction

*A Workbook with Self-Teaching Text and Learning Exercises*


**by IRVING ADLER, Ph.D.**

Author of *The Giant Golden Book of Mathematics*, *The New Mathematics*, and *Magic House of Numbers*

**Illustrated by Dick Martin**



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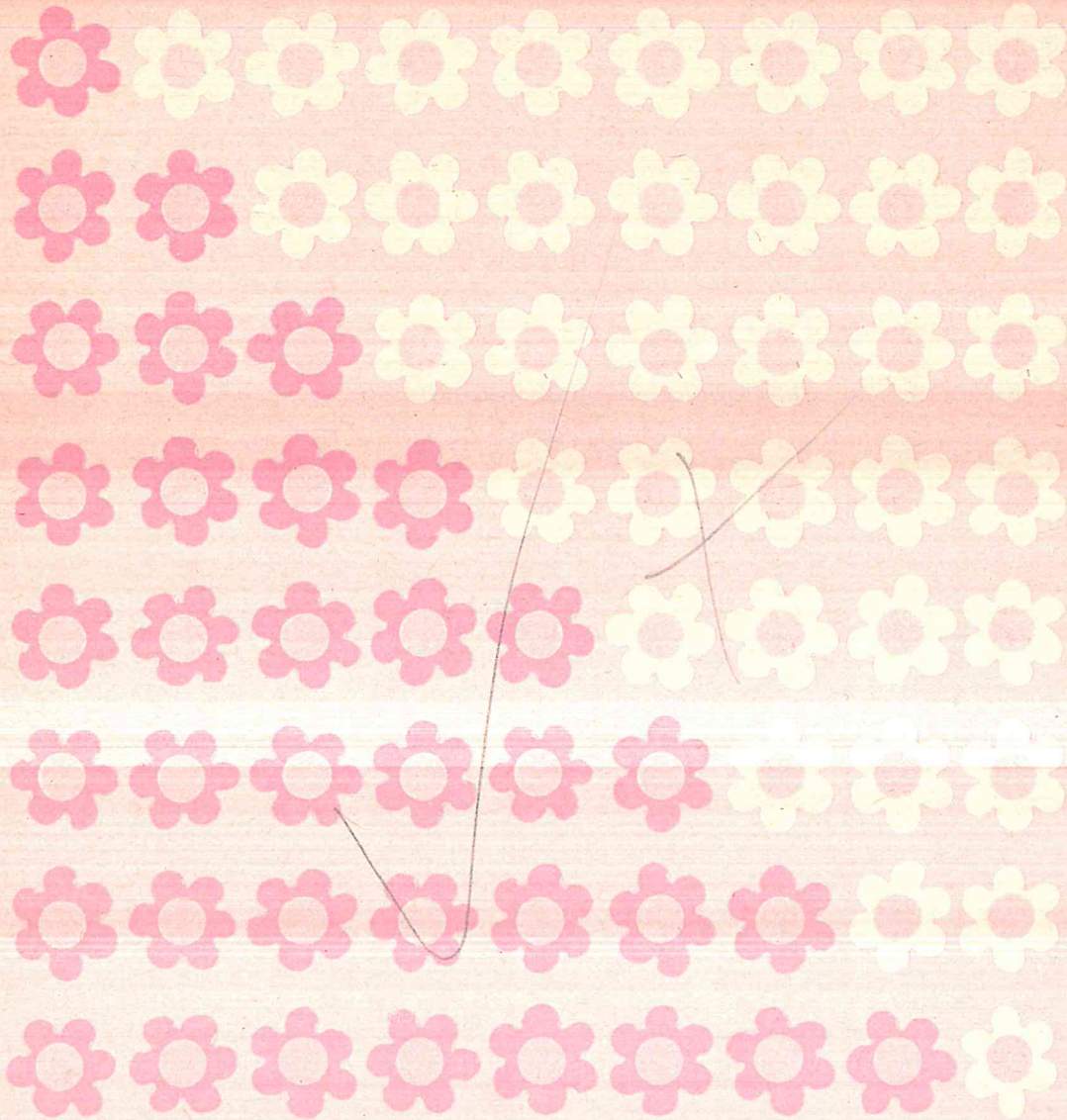
Eighteenth Printing, 1975

This is page 2 It is just before page 3 It is next after page 1

Write the number of white flowers in each row.



1 + 8 = 9

2 + 7 = 9

3 + 6 = 9

4 + 5 = 9

5 + 4 = 9

6 + 3 = 9

7 + 2 = 9

8 + 1 = 9

| | | |
|---|---|---|
| 5 + 4 = 9 | 2 + 5 = 7 | 2 + 1 = 3 |
| 3 + 2 = 5 | 2 + 2 = 4 | 1 + 4 = 5 |
| 1 + 1 = 2 | 3 + 5 = 8 | 4 + 3 = 7 |
| 6 + 2 = 8 | 2 + 1 = 3 | 2 + 7 = 9 |
| 2 + 4 = 6 | 6 + 1 = 7 | 3 + 3 = 6 |

# Groups in Ten

This row has [1] head and [9] tails. [1] + [9] = 10

This row has [2] heads and [8] tails. [2] + [8] = 10

This row has [3] heads and [7] tails. [3] + [7] = 10

This row has [4] heads and [6] tails. [4] + [6] = 10

This row has [5] heads and [5] tails. [5] + [5] = 10

This row has [6] heads and [4] tails. [6] + [4] = 10

This row has [7] heads and [3] tails. [7] + [3] = 10

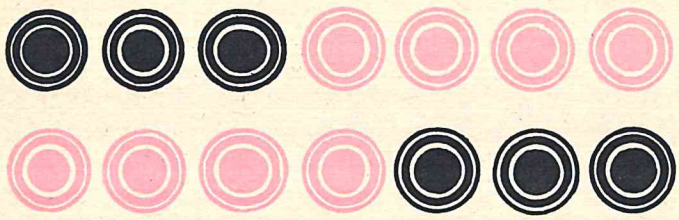
This row has [8] heads and [2] tails. [8] + [2] = 10

This row has [9] heads and [1] tail. [9] + [1] = 10

# Changing Places

This is page 4 The page before this is 3 The next page is 5

This picture tells a story about numbers.

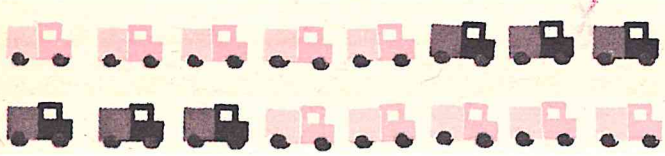


$3 + 4 = 7$ $4 + 3 = 7$

$3 + 4 = 4 + 3$

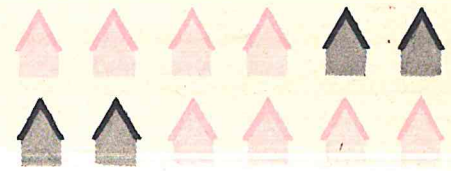
When the pink and black checkers change places, you still have the same number of checkers.

Finish the story of each picture. Write the numbers in the boxes.



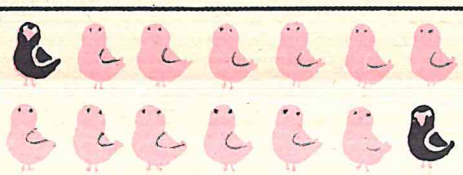
$5 + 3 =$ 8 $3 + 5 =$ 8

$5 + 3 = 3 +$ 5



$4 + 2 =$ 6 $2 + 4 =$ 6

4 $+ 2 = 2 + 4$



$1 + 6 =$ 7 $6 + 1 =$ 7

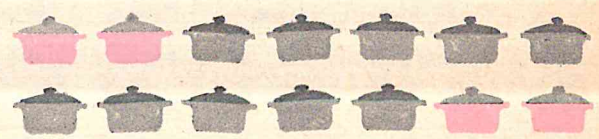
$1 + 6 = 6 +$ 1

$2 + 3 =$ 5 $3 + 2 =$ 5

$2 + 3 =$ 3 $+ 2$

$4 + 5 =$ 9 $5 + 4 =$ 9

$4 + 5 = 5 +$ 4

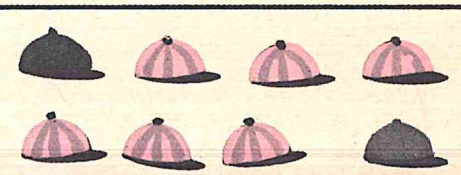


$2 + 5 =$ 7 $5 + 2 =$ 7

$2 + 5 = 5 +$ 2

$2 + 1=$ 3 $1 + 2 =$ 3

$1 + 2 = 2 +$ 1



$1 + 3 =$ 4 $3 + 1 =$ 4

1 $+ 3 = 3 + 1$

# The Sign −

− means minus. **Minus** means take away.

2 − 1 means start with 2 and take away 1.

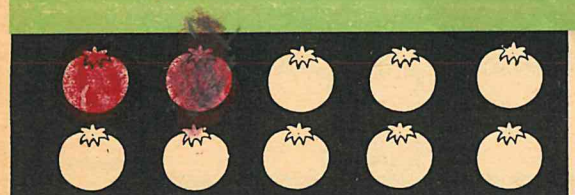
## Taking Away One or Nine

In each set take away one thing by filling it in with crayon.
Then write the number of things left.

2 minus 1 is 1

2 − 1 = 1

$\begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array}$



10 − 1 = 9

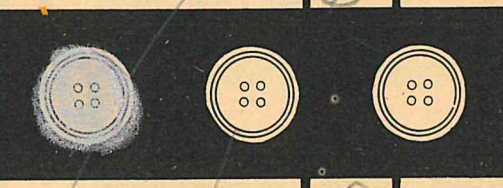
$\begin{array}{r} 10 \\ -1 \\ \hline 9 \end{array}$

7 − 1 = 6

$\begin{array}{r} 7 \\ -1 \\ \hline 6 \end{array}$

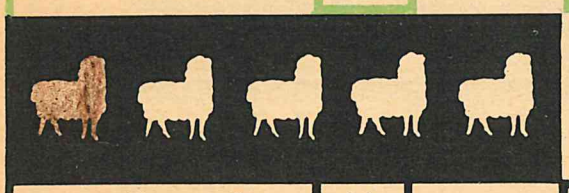
4 − 1 = 3

$\begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array}$



3 − 1 = 2

$\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$

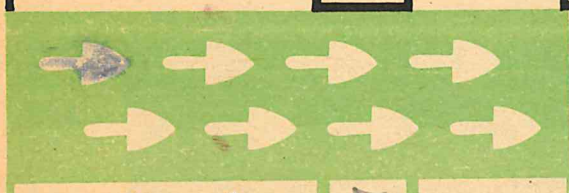


5 − 1 = 4

$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array}$

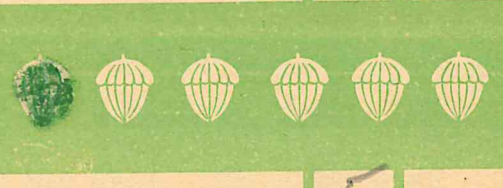
9 − 1 = 8

$\begin{array}{r} 9 \\ -1 \\ \hline 8 \end{array}$



8 − 1 = 7

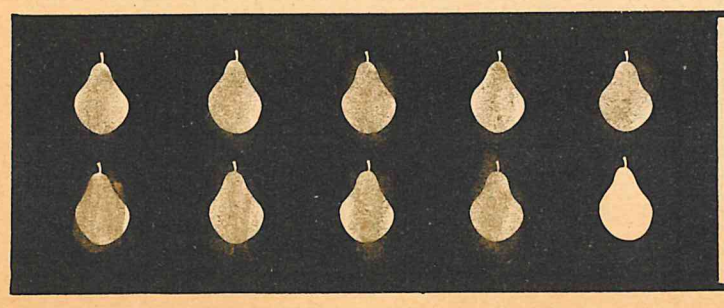
$\begin{array}{r} 8 \\ -1 \\ \hline 7 \end{array}$



6 − 1 = 5

$\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array}$

Take away nine things by filling them in with crayon.



10 minus 9 is 1

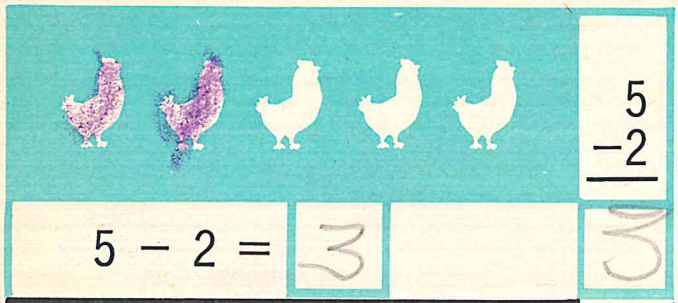
10 − 9 = 1

$\begin{array}{r} 10 \\ -9 \\ \hline 1 \end{array}$

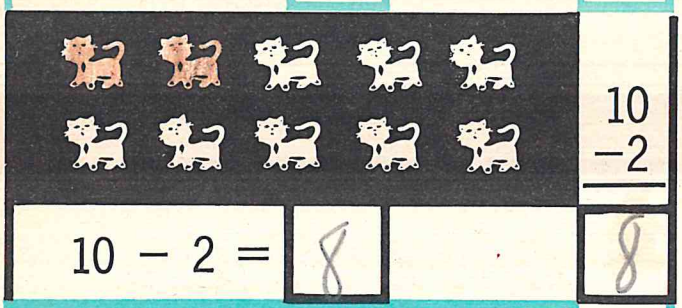
# Taking Away Two or Eight

In each set take away two things by filling them in with crayon.

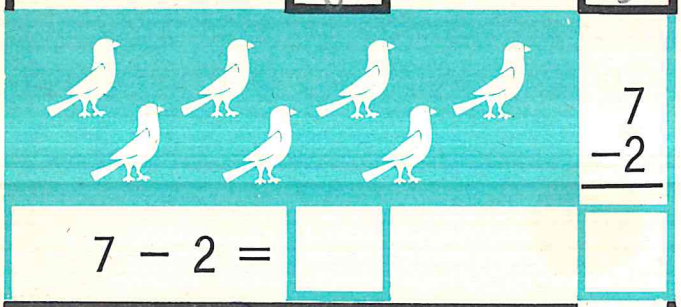
Then write the number of things left.



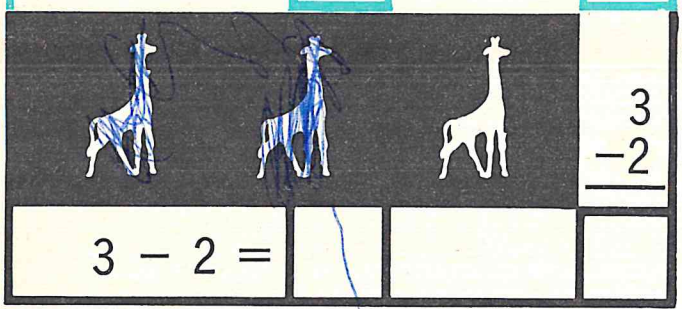
5 − 2 = 3



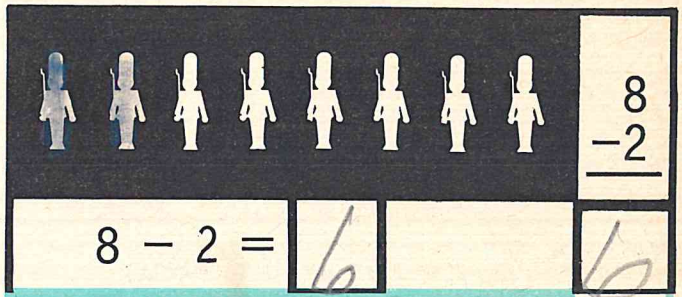
10 − 2 = 8



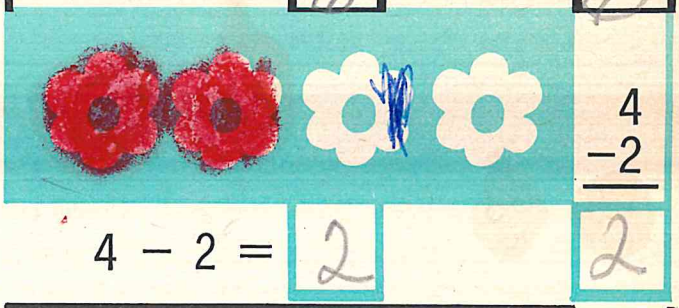
7 − 2 =



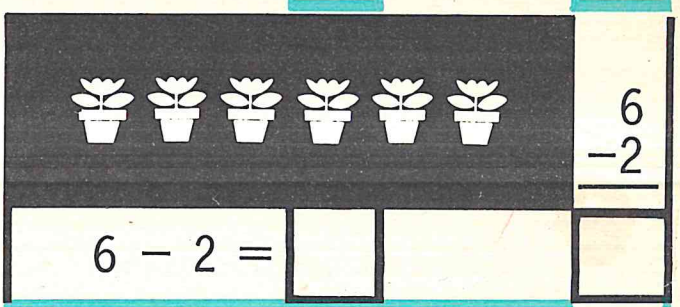
3 − 2 =



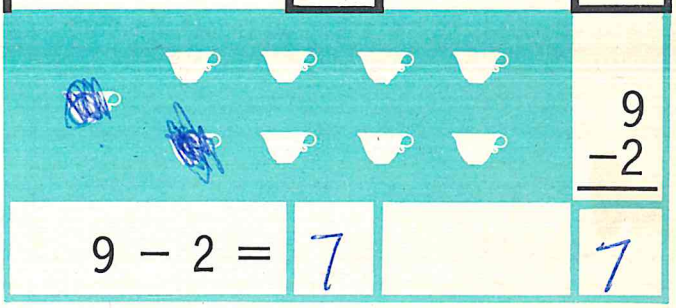
8 − 2 = 6



4 − 2 = 2

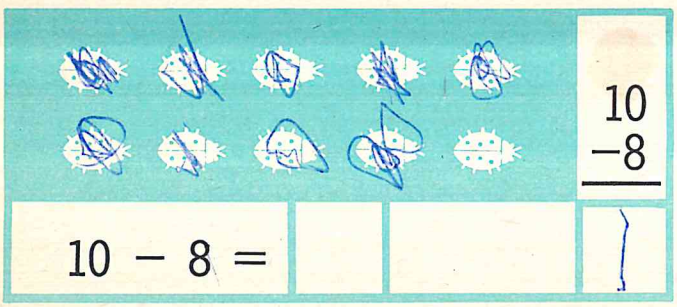


6 − 2 =

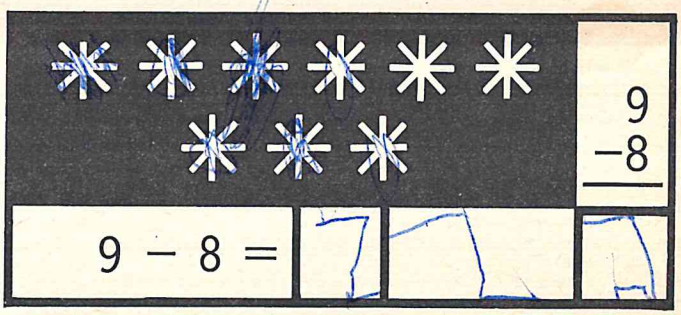


9 − 2 = 7

In each set take away eight things by filling in with crayon.



10 − 8 =

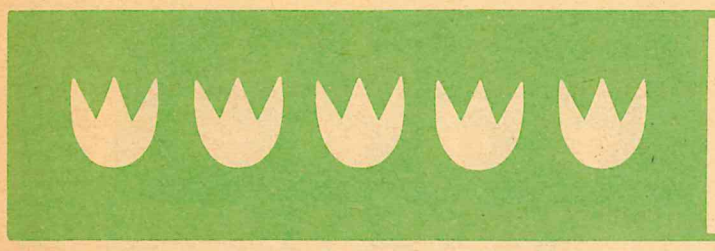


9 − 8 = 7

| 3 −2 | 5 −2 | 9 −2 | 7 −2 | 4 −2 | 10 −2 | 10 −8 | 4 −1 | 9 −8 | 6 −2 | 10 −9 | 8 −2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

# Taking Away Three or Seven

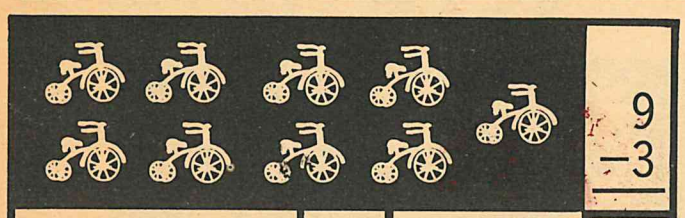
In each set take away three things by filling them in with crayon. Then write the number of things left.



5 minus 3 is ☐

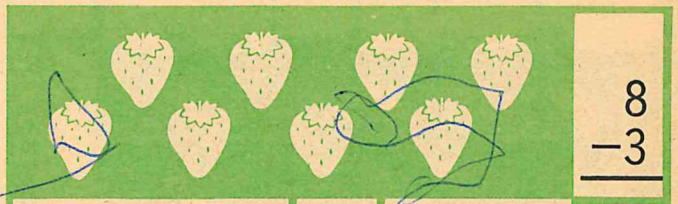
5 − 3 = ☐

$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$



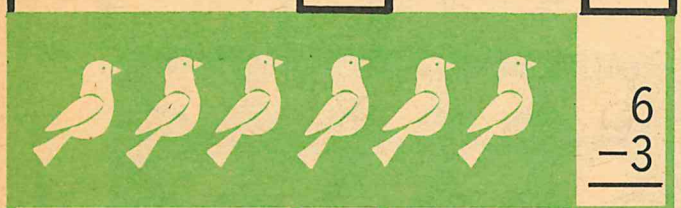
9 − 3 = ☐

$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$



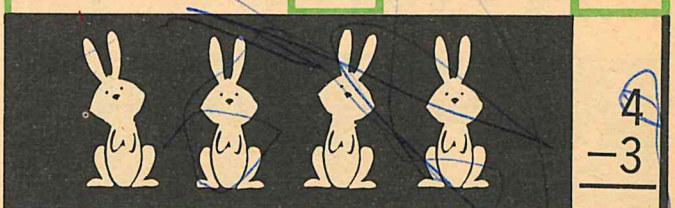
8 − 3 = ☐

$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$



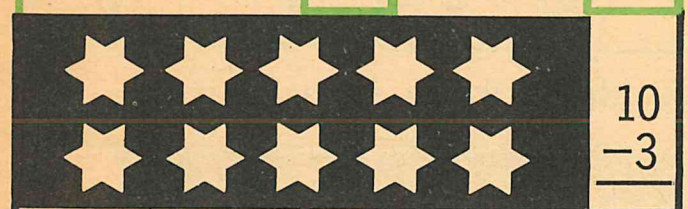
6 − 3 = ☐

$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$



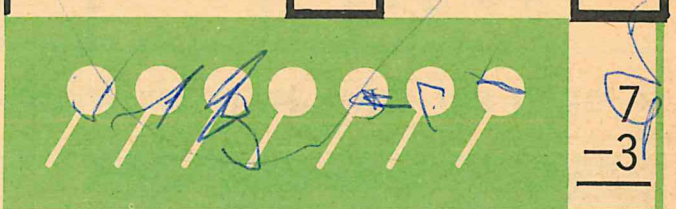
4 − 3 = ☐

$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$



10 − 3 = ☐

$\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$



7 − 3 = ☐

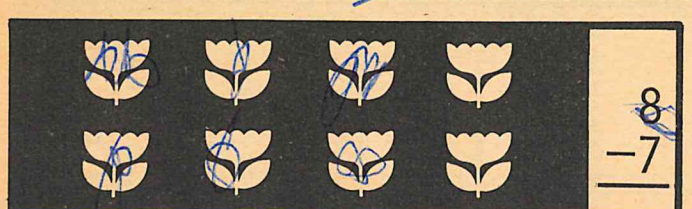
$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$

In each set take away seven things by filling in with crayon.

9 minus 7 is ☐

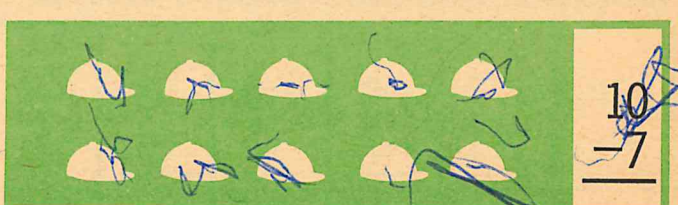
9 − 7 = ☐

$\begin{array}{r} 9 \\ -7 \\ \hline \end{array}$



8 − 7 = ☐

$\begin{array}{r} 8 \\ -7 \\ \hline \end{array}$

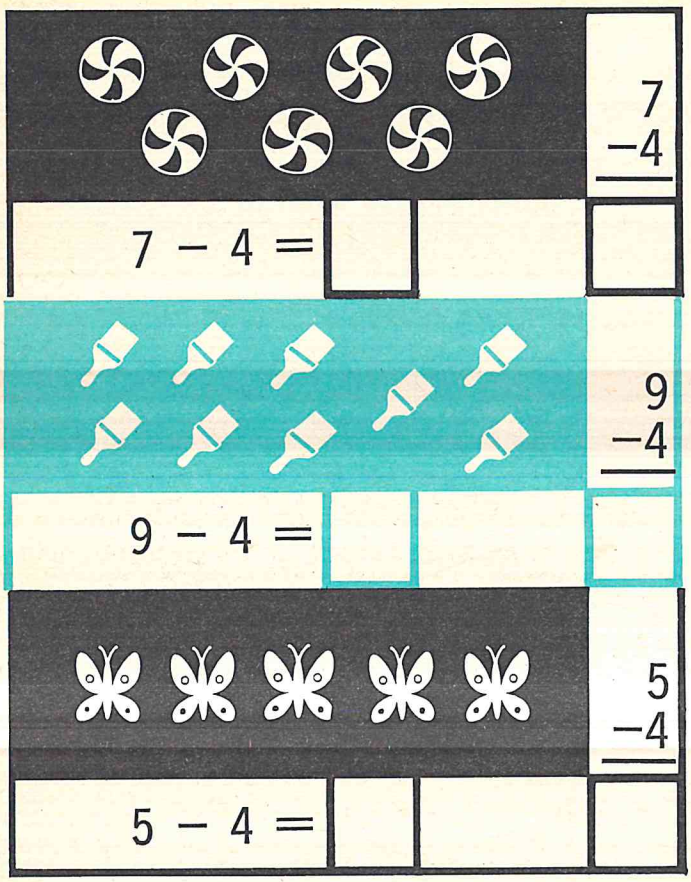


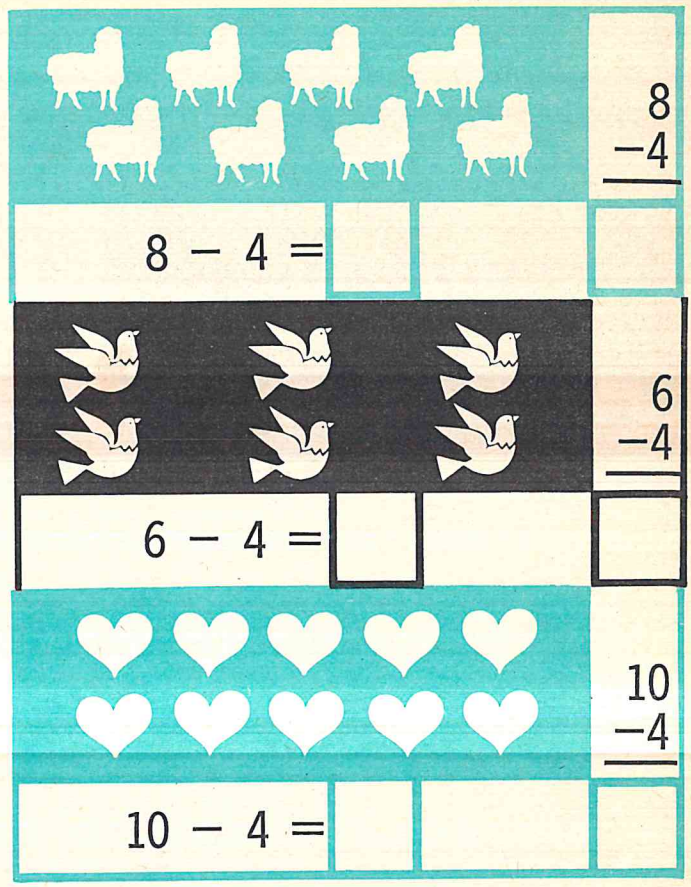
10 − 7 = ☐

$\begin{array}{r} 10 \\ -7 \\ \hline \end{array}$

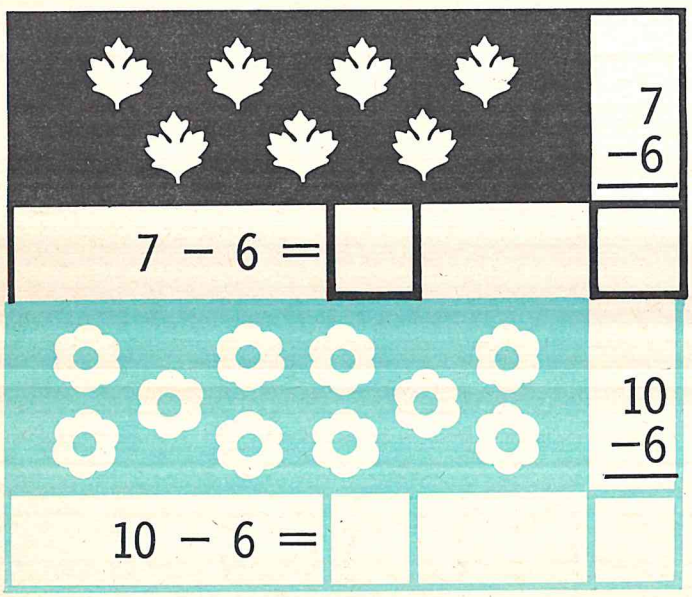
# Taking Away Four or Six

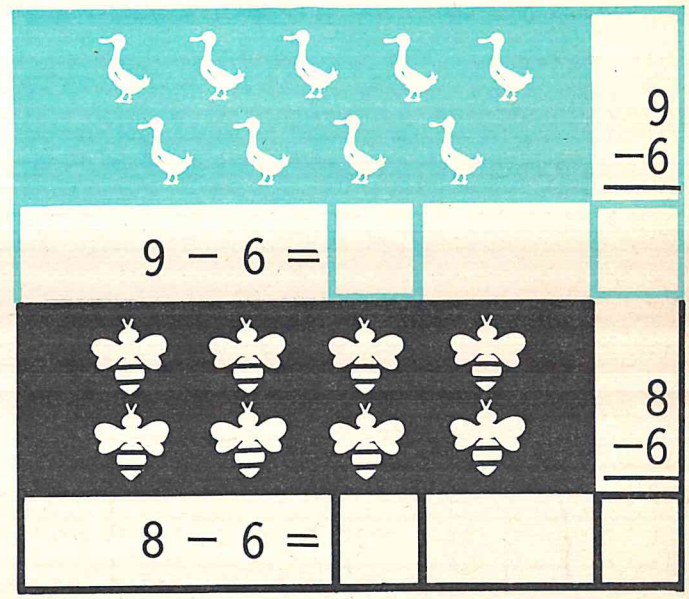
In each set take away four things by filling them in with color. Then write the number of things left.




In each set take away six things by filling them in with color.

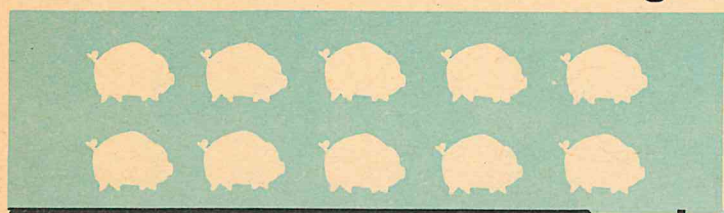



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 −6 | 7 −4 | 9 −7 | 9 −4 | 8 −6 | 7 −6 | 6 −4 | 8 −7 | 9 −6 | 8 −4 | 10 −7 | 10 −4 |
| | | | | | | | | | | | |

# Taking Away Five

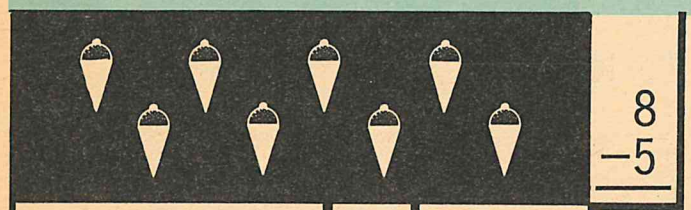
In each set take away five things by filling them in with crayon. Then write the number of things left.



10 minus 5 is ☐

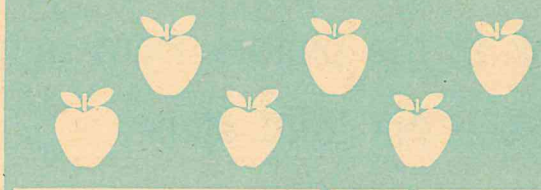
10 − 5 = ☐

$\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$



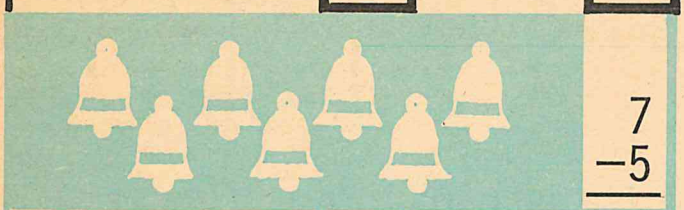
8 − 5 = ☐

$\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$



6 − 5 = ☐

$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$



7 − 5 = ☐

$\begin{array}{r} 7 \\ -5 \\ \hline \end{array}$

9 − 5 = ☐

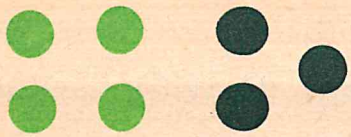
$\begin{array}{r} 9 \\ -5 \\ \hline \end{array}$

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ -4 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -7 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -9 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$ |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $\begin{array}{r} 7 \\ -6 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ -5 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -8 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -6 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -4 \\ \hline \end{array}$ |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -5 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -7 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -4 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$ |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -7 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -5 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ -4 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -6 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$ | $\begin{array}{r} 10 \\ -3 \\ \hline \end{array}$ |
| | | | | | | | | | | | |



# Four Stories

This picture tells four number stories.

To see the **first story**
look at the picture from left to right: 4 + 3 = 7

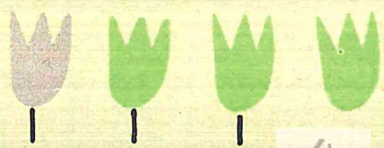
To see the **second story**
look at the picture from right to left: 3 + 4 = 7

To see the **third story**
cover up the green dots: 7 − 4 = 3

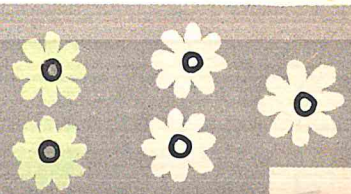
To see the **fourth story**
cover up the black dots: 7 − 3 = 4

Finish the four number stories told by each picture:

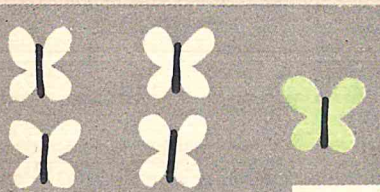
1 + 2 = 3
2 + 1 = 3
3 − 1 = 2
3 − 2 = 1



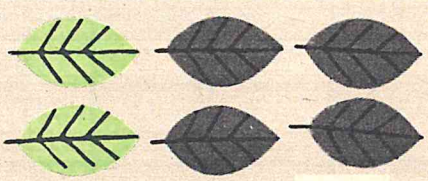
1 + 3 = 4
3 + 1 = 4
4 − 1 = 3
4 − 3 = 1



2 + 3 = 5
3 + 2 = 5
5 − 2 = 3
5 − 3 = 2



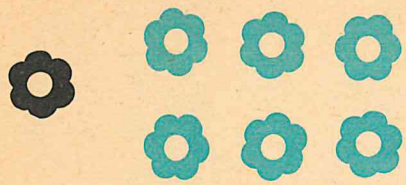
4 + 1 = 5
1 + 4 = 5
5 − 4 = 1
5 − 1 = 4



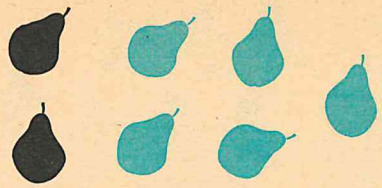
2 + 4 = 6
4 + 2 = 6
6 − 2 = 4
6 − 4 = 2

1 + 5 = 6
5 + 1 = 6
6 − 1 = 5
6 − 5 = 1

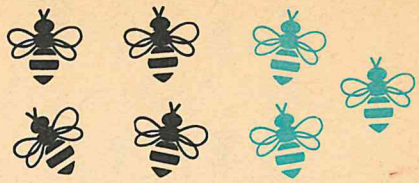
Finish the four number stories told by each picture:



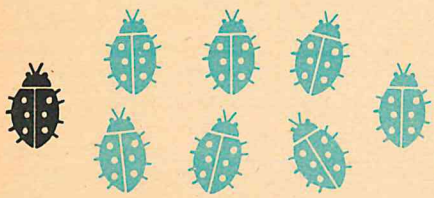
1 + 6 = 7
6 + 1 = 7
7 − 1 = 6
7 − 6 = 1



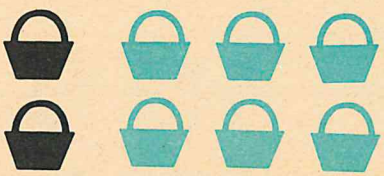
2 + 5 = 7
5 + 2 = 7
7 − 2 = 5
7 − 5 = 2



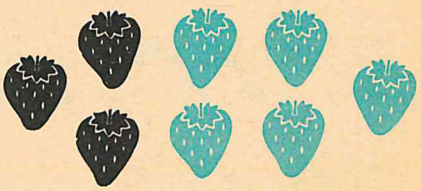
4 + 3 = 7
3 + 4 = 7
7 − 4 = 3
7 − 3 = 4



1 + 7 = 8
6 + 2 = 8
8 − 1 = 7
8 − 7 = 1

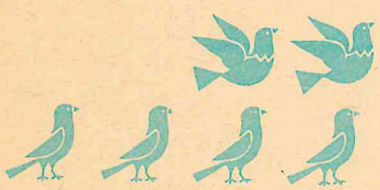


2 + 6 = 8
6 + 2 = 8
8 − 2 = 6
8 − 6 = 2



3 + 5 = 8
5 + 3 = 8
8 − 3 = 5
8 − 5 = 3

Two stories are written for each picture.
Write two more stories for each picture:

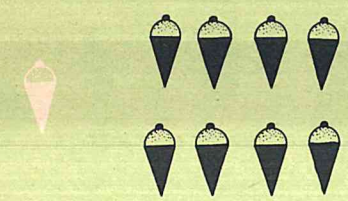


2 + 4 = 6
4 + 2 = 6
6 − 2 = 4
6 − 4 = 2

2 + 3 = 5
3 + 2 = 5
5 − 2 = 3
5 − 3 = 2

3 + 4 = 7
4 + 3 = 7
7 − 4 = 3
7 − 3 = 4

Finish the four number stories told by each picture.

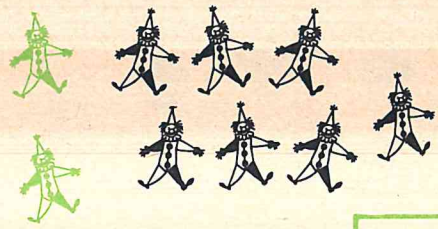


1 + 8 =

+ =

− 1 =

− 8 =

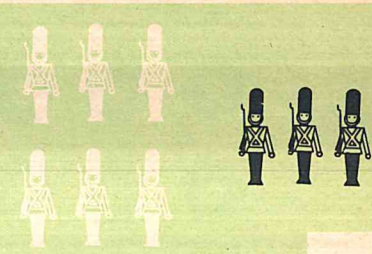


2 + 7 =

+ =

− 2 =

− 7 =



6 + 3 =

+ =

− 6 =

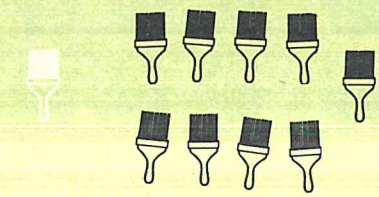
− 3 =

4 + 5 =

+ =

− 4 =

− 5 =

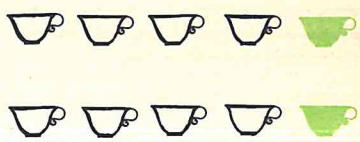


1 + 9 =

+ =

− 1 =

− 9 =



8 + 2 =

+ =

− 8 =

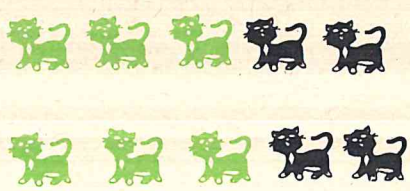
− 2 =

3 + 7 = 10

+ =

− =

− =

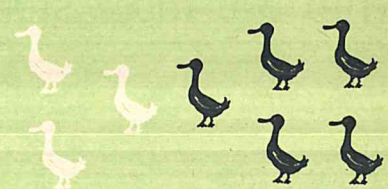


6 + 4 = 10

+ =

− =

− =



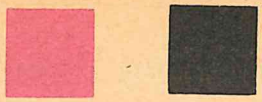
3 + 5 = 8

+ =

− =

− =

# Two Stories



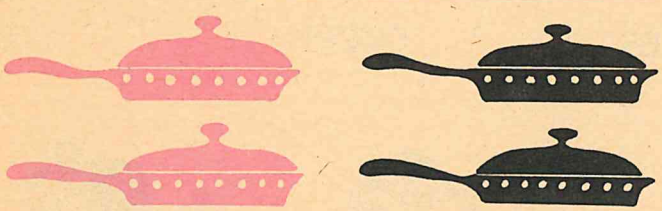
This picture tells two number stories.

The **plus story** is: $1 + 1 = 2$

The **minus story** is: $2 - 1 = 1$

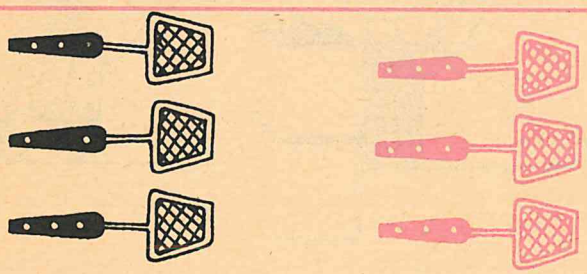
Each of these pictures tells two number stories.

Write the two number stories told by each picture.



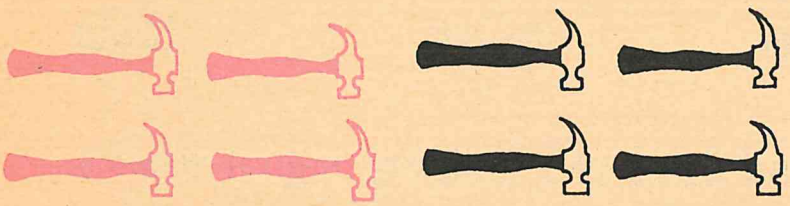
$\square + \square = \square$

$\square - \square = \square$



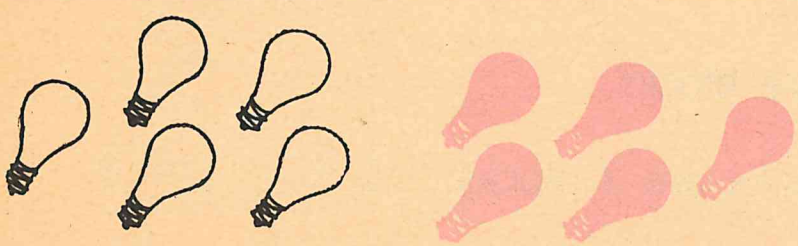
$\square + \square = \square$

$\square - \square = \square$



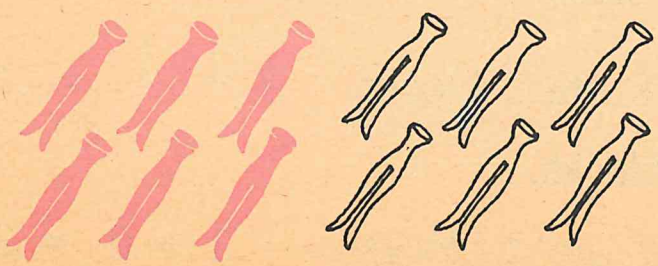
$\square + \square = \square$

$\square - \square = \square$



$\square + \square = \square$

$\square - \square = \square$



$\square + \square = \square$

$\square - \square = \square$

# A Number for None

## 0 zero

The number **zero** means **none.**

| | | | |
|---|---|---|---|
| ★ ★ ★ | ★ ★ | ★ | |
| 3 stars | 2 stars | 1 star | 0 stars |

**0 stars** means no stars.

Write the correct number in each box.

| | | | |
|---|---|---|---|
| ● ● ● | ● ● | ● | |
| [3] circles | [2] circles | [1] circle | [0] circles |

John's tower | Mary's tower | Fred's tower | Jane's tower

John, Mary, Fred, and Jane are building signal towers.
They want to make all the towers as high as John's.

Mary needs [2] more blocks.

1 block and [2] blocks are 3 blocks. 1 + [2] = 3

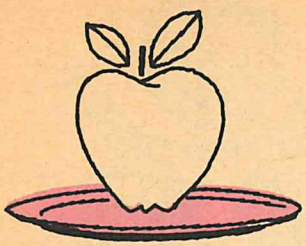
Fred needs [2] more block.

2 blocks and [1] block are 3 blocks. 2 + [1] = 3

Jane needs **no more** blocks.

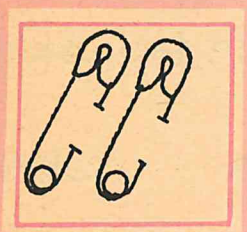
3 blocks and no blocks are 3 blocks. 3 + 0 = 3

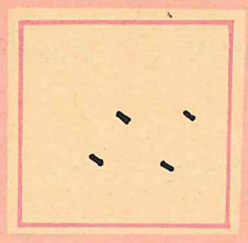
# Adding Zero



1 apple and no apples are ☐ apple.

1 + 0 = ☐





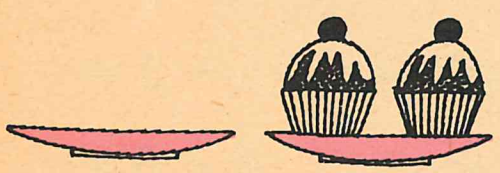
2 pins and no pins are ☐ pins.

2 + 0 = ☐

3 flowers and no flowers are ☐ flowers.

3 + 0 = ☐

| | | | |
|---|---|---|---|
| 4 cakes and no cakes are | ☐ | cakes. | 4 + 0 = ☐ |
| 5 pencils and no pencils are | ☐ | pencils. | 5 + 0 = ☐ |
| 6 books and no books are | ☐ | books. | 6 + 0 = ☐ |
| 7 cents and no cents are | ☐ | cents. | 7 + 0 = ☐ |
| 8 nails and no nails are | ☐ | nails. | 8 + 0 = ☐ |
| 9 cups and no cups are | ☐ | cups. | 9 + 0 = ☐ |
| 10 spoons and no spoons are | ☐ | spoons. | 10 + 0 = ☐ |

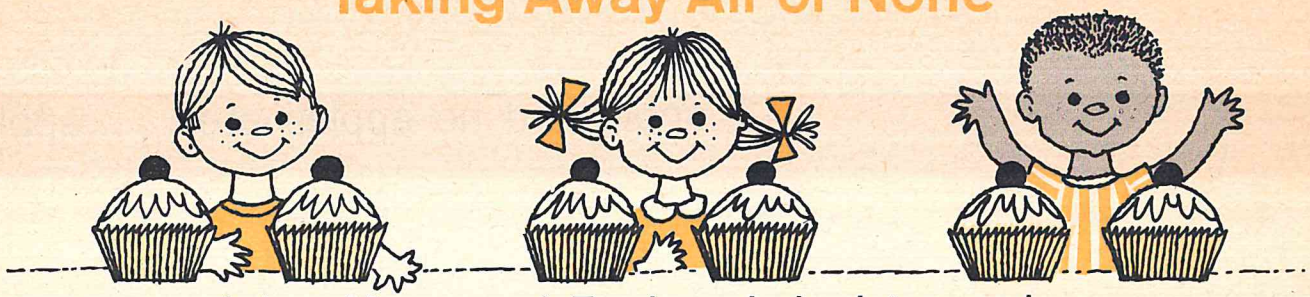


No cakes and 2 cakes are ☐ cakes.

0 + 2 = ☐

| | | | |
|---|---|---|---|
| 0 + 1 = ☐ | 0 + 8 = ☐ | 0 + 3 = ☐ | 0 + 5 = ☐ |
| 0 + 6 = ☐ | 0 + 4 = ☐ | 0 + 9 = ☐ | 0 + 7 = ☐ |

# Taking Away All or None



John, Mary, and Fred each had two cakes.

John ate one cake.

He has ☐ cake left.

2 − 1 = ☐

Mary ate no cakes.

She has ☐ cakes left.

2 − 0 = ☐

Fred ate two cakes.

He has ☐ cakes left.

2 − 2 = ☐

Follow the directions given in each box.

Take away things by filling them in with orange crayon.

Take away 2 dots.

3 − 2 = ☐

Take away 1 dot.

3 − 1 = ☐

Take away 0 dots.

3 − 0 = ☐

Take away 3 dots.

3 − 3 = ☐

Take away 1 bowl.

4 − 1 = ☐

Take away 0 bowls.

4 − 0 = ☐

Take away 4 bowls.

4 − 4 = ☐

Take away 2 bowls.

4 − 2 = ☐

Five pennies minus no pennies are ☐ pennies. 5 − 0 = ☐

Five pennies minus five pennies are ☐ pennies. 5 − 5 = ☐

| | | | |
|---|---|---|---|
| 1 − 0 = ☐ | 1 − 1 = ☐ | 6 − 0 = ☐ | 6 − 6 = ☐ |
| 7 − 0 = ☐ | 7 − 7 = ☐ | 8 − 0 = ☐ | 8 − 8 = ☐ |
| 9 − 0 = ☐ | 9 − 9 = ☐ | 10 − 0 = ☐ | 10 − 10 = ☐ |

# The Number Ladder

The numbers we use for counting are like the rungs of a ladder.

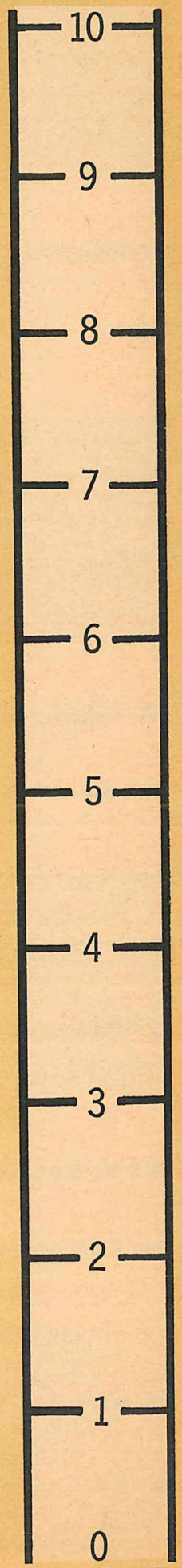
**One** is the first rung.

**Two** is the second rung.

**Three** is the third rung, and so on.

**Zero** is on the ground.

You can add numbers by climbing **up** the ladder.




To add 2 + 3, start at rung 2.
+ 3 means climb **up 3** more rungs.
You land on rung 5, so 2 + 3 = 5.

To add 4 + 3, start at rung ____

Climb up ____ more rungs.

You land on rung ____, so 4 + 3 = ____

To add 8 + 0, start at rung ____

Climb up no more rungs.

You land on rung ____, so 8 + 0 = ____

Add these numbers by climbing the ladder:

| | | |
|---|---|---|
| 6 + 2 = ____ | 2 + 1 = ____ | 7 + 2 = ____ |
| 3 + 0 = ____ | 3 + 6 = ____ | 9 + 1 = ____ |

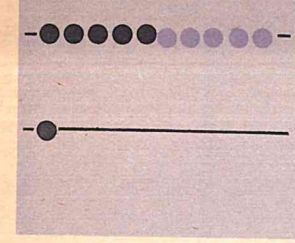
You can subtract numbers by climbing **down** the ladder.

To subtract 5 − 2, start at rung 5.
− 2 means climb **down 2** rungs.
You land on rung 3, so 5 − 2 = 3.

Subtract these numbers by climbing down the ladder:

| | | |
|---|---|---|
| 6 − 1 = ____ | 5 − 4 = ____ | 10 − 2 = ____ |
| 8 − 3 = ____ | 4 − 0 = ____ | 5 − 5 = ____ |

# Up to Twenty

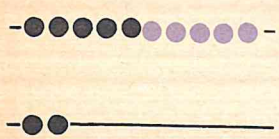


11

**Eleven** means ten and one.

11 is ☐ more than 10.

10 + 1 = 11



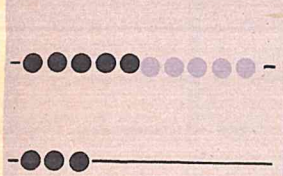
12

**Twelve** means ten and two.

12 is ☐ more than 10.

12 is 1 more than ☐

10 + 2 = 12



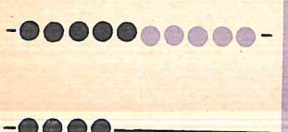
13

**Thirteen** means ten and three.

13 is ☐ more than 10.

13 is 1 more than ☐

10 + 3 = 13



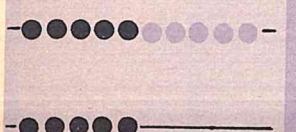
14

**Fourteen** means ten and four.

14 is ☐ more than 10.

14 is 1 more than ☐

10 + 4 = 14



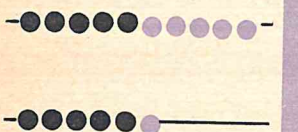
15

**Fifteen** means ten and five.

15 is ☐ more than 10.

15 is 1 more than ☐

10 + 5 = 15



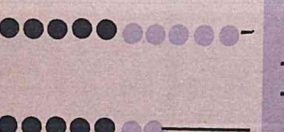
16

**Sixteen** means ten and six.

16 is ☐ more than 10.

16 is 1 more than ☐

10 + 6 = 16



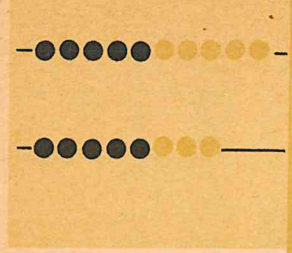
17

**Seventeen** means ten and seven.

17 is ☐ more than 10.

17 is 1 more than ☐

10 + 7 = 17



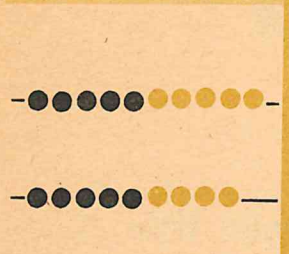
18

**Eighteen** means ten and eight.

18 is ☐ more than 10.

18 is 1 more than ☐

10 + 8 = 18



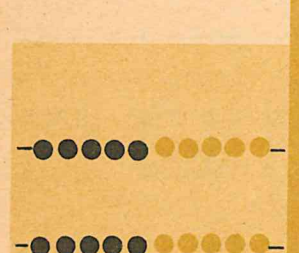
19

**Nineteen** means ten and nine.

19 is ☐ more than 10.

19 is 1 more than ☐

10 + 9 = 19



20

**Twenty** means ten and ten.

20 is ☐ more than 10.

20 is 1 more than ☐

10 + 10 = 20

Write the numbers from 1 to 20, in order.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

| | | | |
|---|---|---|---|
| Ten and six are ☐ | | Ten and nine are ☐ | |
| Ten and one are ☐ | | Ten and three are ☐ | |
| Ten and five are ☐ | | Ten and seven are ☐ | |
| Ten and two are ☐ | | Ten and ten are ☐ | |
| Ten and four are ☐ | | Ten and eight are ☐ | |

| | | | |
|---|---|---|---|
| 10 + 1 = ☐ | 13 + 1 = ☐ | 16 + 1 = ☐ | 19 + 1 = ☐ |
| 11 + 1 = ☐ | 14 + 1 = ☐ | 17 + 1 = ☐ | 10 + 5 = ☐ |
| 12 + 1 = ☐ | 15 + 1 = ☐ | 18 + 1 = ☐ | 10 + 10 = ☐ |

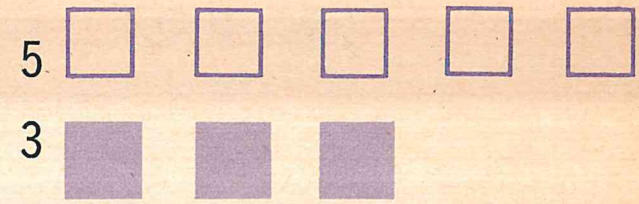
# More and Fewer

Which line has more squares?

Color the first three squares on the top line.

Leave the rest white.

2 squares stay white.



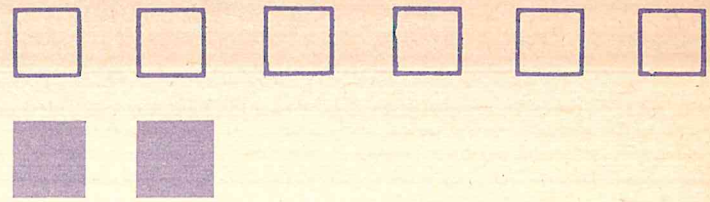

Five is 2 more than three.

Three is 2 fewer than five.

---

Color the first two squares on the top line.

Leave the rest white.




[ ] squares stay white.

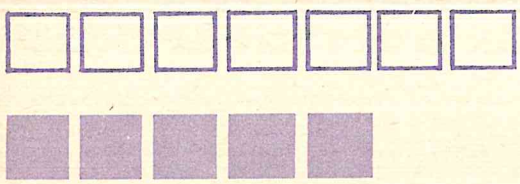
Six is [ ] more than two.

Two is [ ] fewer than six.

---

Color each square that is above a purple square.

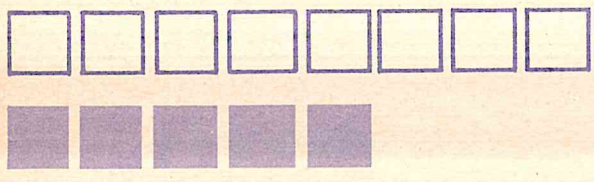
To answer the questions, count the white squares.




Seven is [ ] more than five.

Five is [ ] fewer than seven.

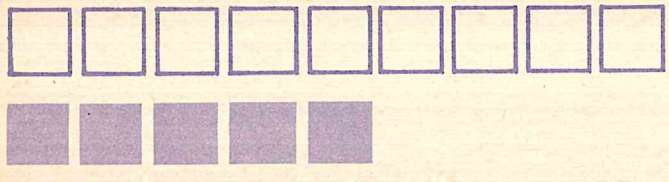
---




Eight is [ ] more than five.

Five is [ ] fewer than eight.

---




Nine is [ ] more than five.

Five is [ ] fewer than nine.

| | | |
|---|---|---|
| 6 is [ ] more than 5. | 6 is [ ] more than 2. | 6 is [ ] fewer than 9. |
| 6 is [ ] more than 4. | 6 is [ ] more than 1. | 6 is [ ] fewer than 8. |
| 6 is [ ] more than 3. | 6 is [ ] fewer than 10. | 6 is [ ] fewer than 7. |

# Standing in Line

These children are standing in line in the lunch room.

Under each are two ways of writing the name of his place in line.

| first | second | third | fourth | fifth | sixth | seventh |
|---|---|---|---|---|---|---|
| 1st | 2nd | 3rd | 4th | 5th | 6th | 7th |

After the 3rd place, each place name ends in **th,** up to the 20th place.

Write in each square the place name that finishes the sentence.

8th place is next after 7th.

☐ place is next after 8th.

☐ place is next after 10th.

☐ place is next after 12th.

☐ place is next after 14th.

☐ place is next after 16th.

☐ place is next after 18th.

☐ place is next after 13th.

☐ place is next after 15th.

☐ place is next after 17th.

☐ place is just before 7th.

☐ place is just before 8th.

☐ place is just before 10th.

☐ place is just before 12th.

☐ place is just before 14th.

☐ place is just before 16th.

☐ place is just before 18th.

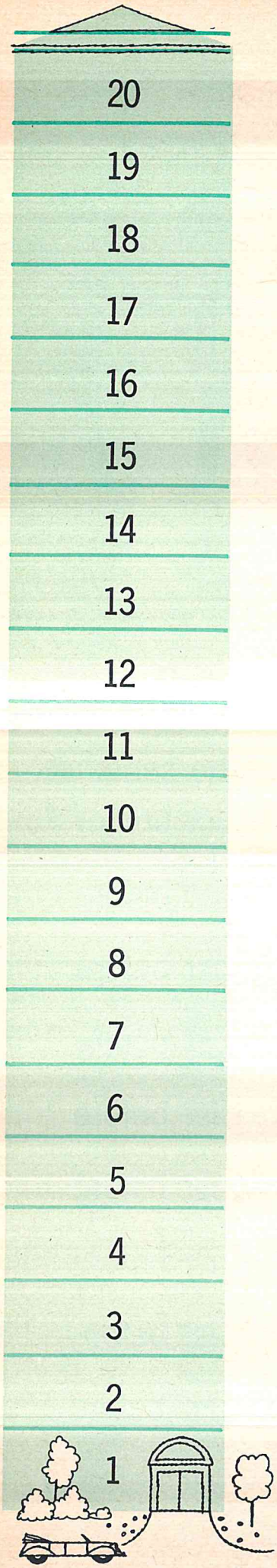
☐ place is just before 13th.

☐ place is just before 15th.

☐ place is just before 17th.

☐ place has no place before it.

# The Skyscraper




This building has twenty floors. They are numbered from 1 to 20. Write the numbers of the floors in order, starting with 1.

| 1 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

One elevator on its way up stops at the 10th floor and all floors above it. Write in order the numbers of the floors it stops at.

| 10 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

One elevator on its way down stops at every floor starting with the 12th floor. Write in order the numbers of the floors it stops at.

| 12 | | | | | |
|---|---|---|---|---|---|
| | | | | | 1 |

Count up to 20, starting with 14.

| 14 | | | | | | |
|---|---|---|---|---|---|---|

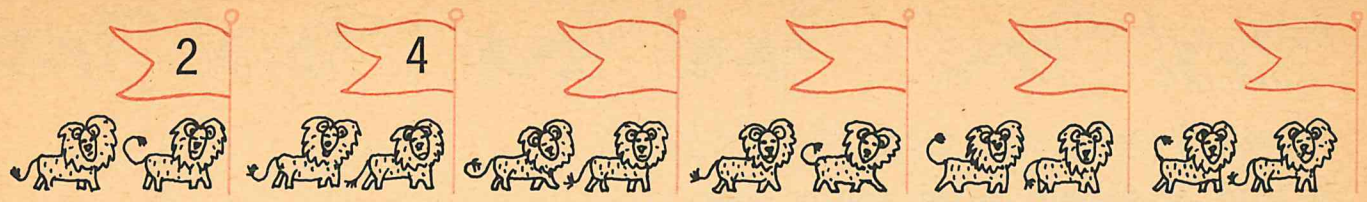
Count backwards from 10.

| 10 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|

Count backwards, starting with 16.

| 16 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

# Counting by Twos




Write on each flag the number of lions that are to the left of it.

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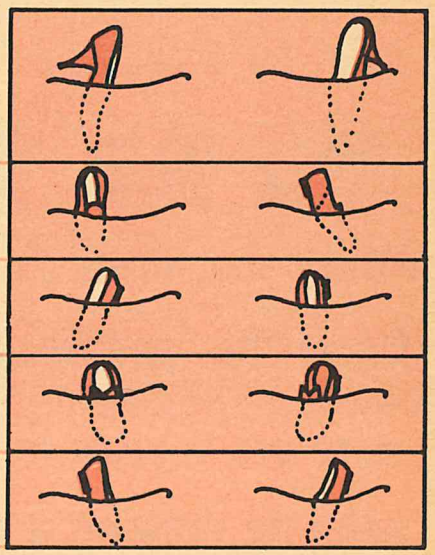
Count two at a time to find the number of shoes in the shoe bag.



There are ☐ shoes above this line.

There are ☐ shoes above this line.

There are ☐ shoes above this line.

There are ☐ shoes above this line.

There are ☐ shoes above this line.

Count by twos up to 20.
Write the numbers in the boxes.

Count backwards by twos, starting with 20.

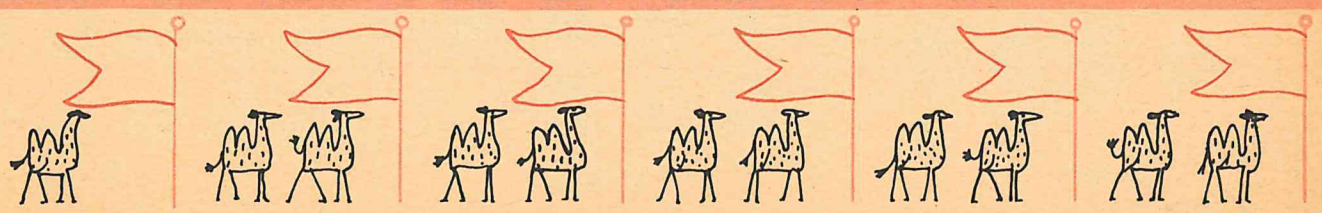
20

Starting with 8, count by twos up to 20.

8

Starting with 16, count backwards by twos.

16



Write on each flag the number of camels that are to the left of it.

# Evens and Odds

These 6 dogs are arranged in pairs.
A line is drawn after each pair.

Here are 8 cats in a row. Starting at the left, divide them into pairs by drawing a line after each pair.

When you finish, is there any cat that isn't in a pair?

Circle the right answer: yes no

Here are 9 birds in a row. Starting at the left, divide them into pairs by drawing a line after each pair.

When you finish, is there any bird that isn't in a pair?

Circle the right answer: yes no

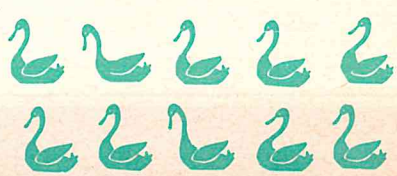
When you divide a group of things into pairs,
if nothing is left by itself, the number is **even.**
If there is one thing left by itself, the number is **odd.**

Circle the right answers. 8 is { even. / odd. } 9 is { even. / odd. }

Divide these groups into pairs. Then circle the right word.

4 is { even. / odd. }

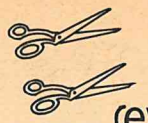
7 is { even. / odd. }



10 is { even. / odd. }

1 is {even. / odd.

5 is {even. / odd.



2 is {even. / odd.

3 is {even. / odd.

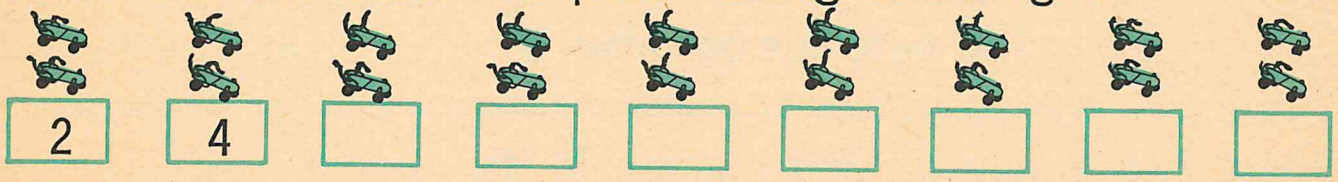
Circle the right words.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 is | even | odd | 5 is | even | odd | 9 is | even | odd |
| 2 is | even | odd | 6 is | even | odd | 10 is | even | odd |
| 3 is | even | odd | 7 is | even | odd | 11 is | even | odd |
| 4 is | even | odd | 8 is | even | odd | 12 is | even | odd |

Count by twos, starting with 2.

As you count, write the numbers in the boxes.

Then divide the skates into pairs starting at the right.

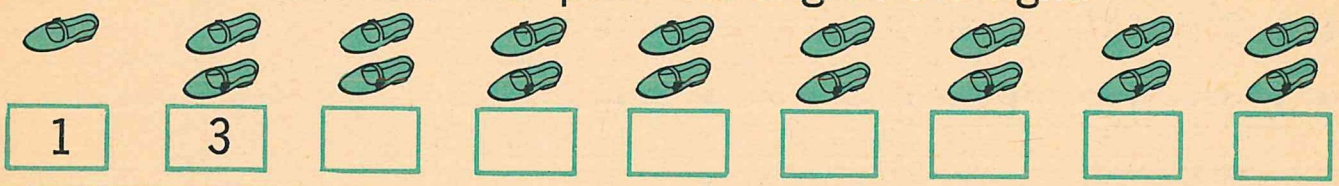


2 | 4 | | | | | | | |

Count by twos, starting with 1.

As you count, write the numbers in the boxes.

Then divide the shoes into pairs starting at the right.



1 | 3 | | | | | | | |

Circle the right word.

When you count by twos, starting with 2, the numbers you say are

odd even

When you count by twos, starting with 1, the numbers you say are

odd even

Circle every even number.

1 2 3 4 5 6 7 8 9 10

11 12 13 14 15 16 17 18 19 20

Circle the right word.

The next number after an even number is an {odd / even} number.

# Adding One or Two

11 + 1 = 12  12 is the next number after 11.

When you add 1 to a number, you get the next higher number.

| | | | |
|---|---|---|---|
| The next number after 13 is | | 13 + 1 = | |
| The next number after 16 is | | 16 + 1 = | |
| The next number after 19 is | | 19 + 1 = | |
| The next number after 14 is | | 14 + 1 = | |
| The next number after 17 is | | 17 + 1 = | |
| The next number after 15 is | | 15 + 1 = | |
| The next number after 18 is | | 18 + 1 = | |

To add 2 to a number, add 1 and 1 to the number.

12 + 2 = 12 + 1 + 1 = 13 + 1 = 14

| | | | |
|---|---|---|---|
| 15 + 2 = 15 + 1 + 1 = | | + 1 = | |
| 14 + 2 = 14 + 1 + 1 = | | + 1 = | |
| 17 + 2 = 17 + 1 + 1 = | | + 1 = | |
| 13 + 2 = 13 + 1 + 1 = | | + 1 = | |
| 16 + 2 = 16 + 1 + 1 = | | + 1 = | |
| 18 + 2 = 18 + 1 + 1 = | | + 1 = | |

Add these numbers:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 13 | 15 | 17 | 19 | 10 | 12 | 14 | 16 | 18 |
| + 1 | + 1 | + 1 | + 1 | + 1 | + 1 | + 1 | + 1 | + 1 | + 1 |
| | | | | | | | | | |

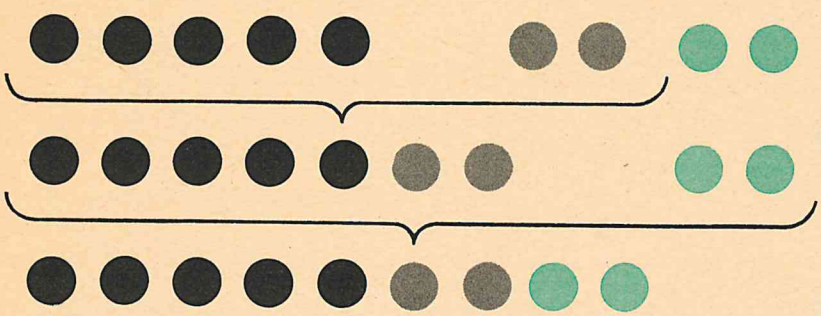
An odd number plus 1 is { even. / odd. }

An even number plus 1 is { even. / odd. }

# Adding Three Numbers

To add three numbers, add the first and second number, then add the third number to their sum.

**Example**



To add 5 + 2 + 2, say:

5 and 2 are 7.

7 and 2 are 9.

So 5 + 2 + 2 = 9.

| | | | |
|---|---|---|---|
| 3 + 2 + 2 = | 5 | + 2 = | |
| 6 + 2 + 2 = | | + 2 = | |
| 8 + 2 + 2 = | | + 2 = | |
| 10 + 2 + 2 = | | + 2 = | |
| 13 + 2 + 2 = | | + 2 = | |

| | | | |
|---|---|---|---|
| 3 + 2 + 1 = | | + 1 = | |
| 8 + 2 + 1 = | | + 1 = | |
| 12 + 2 + 1 = | | + 1 = | |
| 9 + 1 + 2 = | | + 2 = | |
| 7 + 1 + 2 = | | + 2 = | |

| | | | |
|---|---|---|---|
| 5 + 2 + 2 = | | 4 + 2 + 1 = | |
| 9 + 2 + 2 = | | 6 + 1 + 2 = | |
| 10 + 2 + 1 = | | 8 + 1 + 2 = | |

| | | | |
|---|---|---|---|
| 5 + 2 + 1 = | | | |
| 11 + 2 + 2 = | | | |
| 4 + 2 + 2 = | | | |

Add these numbers:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 7 | 7 | 8 | 3 | 15 | 12 | 14 | 15 | 13 | 12 | 11 |
| 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 |
| 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 2 |
| | | | | | | | | | | | |

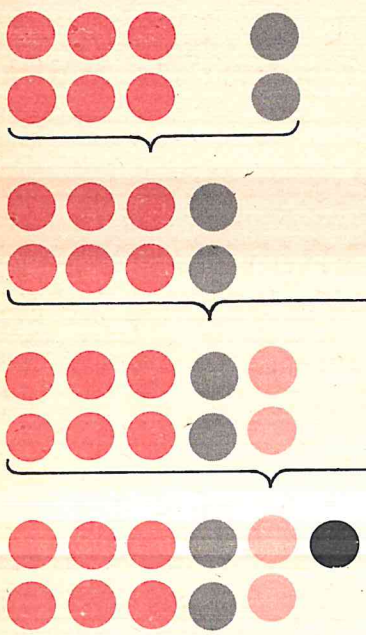
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 12 | 9 | 10 | 13 | 10 | 15 | 17 | 9 | 11 | 16 | 17 |
| 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 2 |
| 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 |
| | | | | | | | | | | | |

# Adding Four Numbers

To add four numbers, add the first two numbers,
then add the third number to the sum of the first two,
then add the fourth number to the sum of the first three.

**Example**

To add 6 + 2 + 2 + 1, say:



6 and 2 are 8.

8 and 2 are 10.

10 and 1 are 11.

So 6 + 2 + 2 + 1 = 11.

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 + 2 | + 2 + 2 = | 3 | + 2 + 2 = | 5 | + 2 = | |
| 3 + 2 | + 2 + 2 = | | + 2 + 2 = | | + 2 = | |
| 4 + 2 | + 2 + 1 = | | + 2 + 1 = | | + 1 = | |
| 5 + 1 | + 1 + 2 = | | + 1 + 2 = | | + 2 = | |

| | | |
|---|---|---|
| 6 + 2 + 1 + 2= | 8 + 1 + 1 + 2= | 12 + 2 + 2 + 2= |
| 13 + 1 + 1 + 2= | 15 + 1 + 1 + 2= | 14 + 2 + 2 + 1= |

Add these numbers:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 5 | 8 | 12 | 16 | 9 | 2 | 10 | 10 | 15 | 12 | 13 |
| 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 2 |
| 2 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 2 |
| 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 2 |
| | | | | | | | | | | | |

# Adding a Little at a Time

We can add a large number by adding a little at a time.

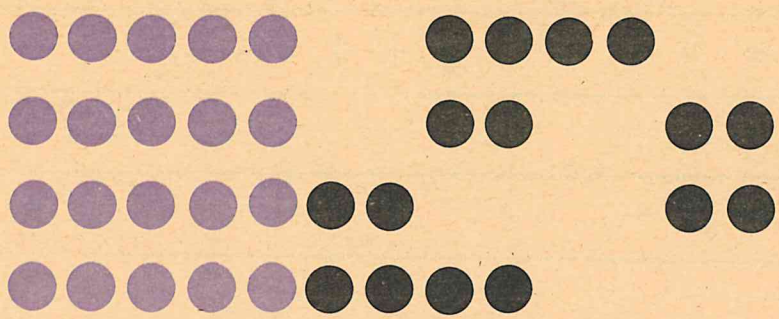
To add 5 + 4, remember that 4 is the same as 2 + 2.

Then 5 + 4

equals 5 + 2 + 2

equals 7 + 2

equals 9.



| | |
|---|---|
| 8 + 4 = 8 + 2 + 2 = ☐ + 2 = ☐ | 12 + 4 = 12 + 2 + 2 = ☐ + 2 = ☐ |
| 13 + 4 = 13 + 2 + 2 = ☐ + 2 = ☐ | 15 + 4 = 15 + 2 + 2 = ☐ + 2 = ☐ |

To add 3 remember that 3 is the same as 2 + 1.

| | |
|---|---|
| 8 + 3 = 8 + 2 + 1 = ☐ + 1 = ☐ | 12 + 3 = 12 + 2 + 1 = ☐ + 1 = ☐ |
| 9 + 3 = 9 + 2 + 1 = ☐ + 1 = ☐ | 14 + 3 = 14 + 2 + 1 = ☐ + 1 = ☐ |

To add 6 remember that 6 is the same as 2 + 2 + 2.

| | | |
|---|---|---|
| 6 + 6 = 6 + 2 + 2 + 2 = ☐ | + 2 + 2 = ☐ | + 2 = ☐ |
| 8 + 6 = 8 + 2 + 2 + 2 = ☐ | + 2 + 2 = ☐ | + 2 = ☐ |
| 7 + 6 = 7 + 2 + 2 + 2 = ☐ | + 2 + 2 = ☐ | + 2 = ☐ |

To add 5 remember that 5 is the same as 2 + 2 + 1.

| | | |
|---|---|---|
| 6 + 5 = 6 + 2 + 2 + 1 = ☐ | + 2 + 1 = ☐ | + 1 = ☐ |
| 7 + 5 = 7 + 2 + 2 + 1 = ☐ | + 2 + 1 = ☐ | + 1 = ☐ |
| 8 + 5 = 8 + 2 + 2 + 1 = ☐ | + 2 + 1 = ☐ | + 1 = ☐ |

Now split the second number yourself.

| | |
|---|---|
| 9 + 4 = 9 + ☐ + ☐ = ☐ + ☐ = ☐ | |
| 11 + 5 = 11 + ☐ + ☐ + ☐ = ☐ + ☐ + ☐ = ☐ + ☐ = ☐ | |
| 12 + 6 = 12 + ☐ + ☐ + ☐ = ☐ + ☐ + ☐ = ☐ + ☐ = ☐ | |
| 11 + 4 = 11 + ☐ + ☐ = ☐ + ☐ = ☐ | |

# Adding a Little at a Time

| | | | | |
|---|---|---|---|---|
| 7 + 4 = | 7 + ☐ | + 2 = ☐ | + 2 = ☐ | |
| 7 + 3 = | 7 + ☐ | + 1 = ☐ | + 1 = ☐ | |
| 9 + 5 = | 9 + ☐ | + 2 + 1 = ☐ | + 2 + 1 = ☐ | + 1 = ☐ |
| 11 + 3 = | 11 + ☐ | + ☐ = ☐ | + ☐ = ☐ | |
| 12 + 5 = | 12 + ☐ | + ☐ + ☐ = ☐ | + ☐ + ☐ = ☐ | + ☐ = ☐ |

Think out these exercises in your head by adding a little at a time:

| | | | |
|---|---|---|---|
| 8 + 3 = ☐ | 8 + 4 = ☐ | 8 + 5 = ☐ | 8 + 6 = ☐ |
| 9 + 3 = ☐ | 9 + 4 = ☐ | 9 + 5 = ☐ | 9 + 6 = ☐ |
| 7 + 3 = ☐ | 7 + 4 = ☐ | 7 + 5 = ☐ | 7 + 6 = ☐ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 12 | 7 | 13 | 8 | 6 | 9 | 14 | 11 | 16 | 17 | 15 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 9 | 10 | 6 | 15 | 11 | 7 | 8 | 16 | 13 | 5 | 12 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 9 | 12 | 4 | 6 | 10 | 5 | 13 | 15 | 7 | 14 | 8 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | 5 | 10 | 8 | 12 | 3 | 7 | 6 | 11 | 14 | 13 | 4 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | | | | | | | | | | | |

# Changing Places

Addition is easier if the smaller number is written second.
If the smaller number is first, let the numbers change places.

**Example** 4 + 8

equals 8 + 4

equals 8 + 2 + 2

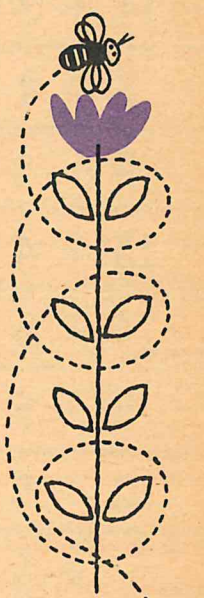
equals 10 + 2

equals 12

---

After the numbers change places, add a little at a time.

| | |
|---|---|
| 3 + 7 = 7 + 3 = 7 + □ + □ = □ + □ = □ | |
| 4 + 7 = 7 + 4 = 7 + □ + □ = □ + □ = □ | |
| 4 + 9 = 9 + 4 = 9 + □ + □ = □ + □ = □ | |
| 3 + 9 = 9 + 3 = 9 + □ + □ = □ + □ = □ | |
| 3 + 12 = 12 + 3 = 12 + □ + □ = □ + □ = □ | |
| 5 + 7 = 7 + □ = 7 + □ + □ + □ = □ | |
| 5 + 8 = 8 + □ = 8 + □ + □ + □ = □ | |



First let the numbers change places.
Then add a little at a time in your head.

| | |
|---|---|
| 3 + 11 = 11 + □ = □ | 3 + 15 = 15 + □ = □ |
| 4 + 12 = 12 + □ = □ | 5 + 12 = 12 + □ = □ |
| 6 + 7 = 7 + □ = □ | 6 + 8 = 8 + □ = □ |
| 4 + 10 = 10 + □ = □ | 4 + 11 = 11 + □ = □ |
| 3 + 13 = 13 + □ = □ | 3 + 14 = 14 + □ = □ |

# Review

To add 3, add ☐ and ☐

To add 4, add ☐ and ☐

To add 5, add ☐ and ☐ and ☐

To add 6, add ☐ and ☐ and ☐

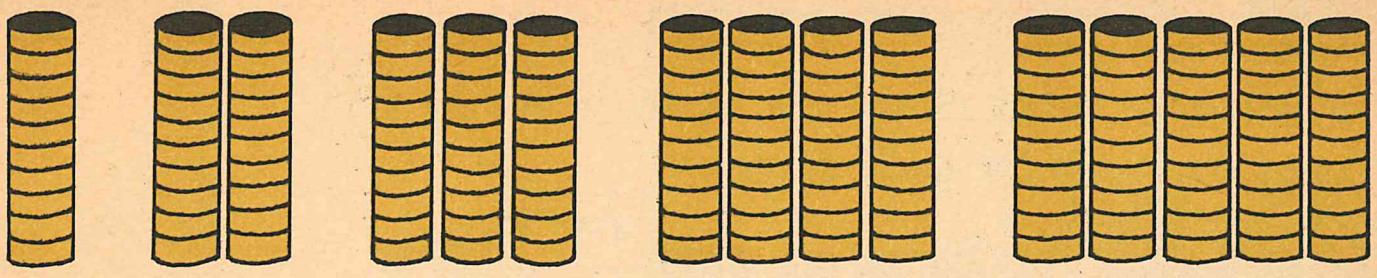
Add a little at a time in your head.

| | | | |
|---|---|---|---|
| 6 + 3 = ☐ | 7 + 3 = ☐ | 8 + 3 = ☐ | 9 + 3 = ☐ |
| 10 + 3 = ☐ | 11 + 3 = ☐ | 12 + 3 = ☐ | 13 + 3 = ☐ |
| 14 + 3 = ☐ | 15 + 3 = ☐ | 16 + 3 = ☐ | 17 + 3 = ☐ |
| 5 + 4 = ☐ | 6 + 4 = ☐ | 7 + 4 = ☐ | 8 + 4 = ☐ |
| 9 + 4 = ☐ | 10 + 4 = ☐ | 11 + 4 = ☐ | 12 + 4 = ☐ |
| 13 + 4 = ☐ | 14 + 4 = ☐ | 15 + 4 = ☐ | 16 + 4 = ☐ |
| 4 + 5 = ☐ | 5 + 5 = ☐ | 6 + 5 = ☐ | 7 + 5 = ☐ |
| 8 + 5 = ☐ | 9 + 5 = ☐ | 10 + 5 = ☐ | 11 + 5 = ☐ |
| 12 + 5 = ☐ | 13 + 5 = ☐ | 14 + 5 = ☐ | 15 + 5 = ☐ |
| 7 + 6 = ☐ | 8 + 6 = ☐ | 9 + 6 = ☐ | 10 + 6 = ☐ |
| 11 + 6 = ☐ | 12 + 6 = ☐ | 13 + 6 = ☐ | 14 + 6 = ☐ |

Change places and add a little at a time in your head.

| | | | |
|---|---|---|---|
| 3 + 8 = ☐ | 4 + 7 = ☐ | 5 + 6 = ☐ | 6 + 7 = ☐ |
| 5 + 8 = ☐ | 3 + 9 = ☐ | 4 + 8 = ☐ | 5 + 7 = ☐ |
| 4 + 10 = ☐ | 5 + 9 = ☐ | 3 + 10 = ☐ | 4 + 9 = ☐ |

# Counting by Tens



10 Ten | 20 Twenty | 30 Thirty | 40 Forty | 50 Fifty

| | | |
|---|---|---|
| Ten and ten are twenty. | 10 + 10 = | 20 − 10 = |
| Twenty and ten are thirty. | 20 + 10 = | 30 − 10 = |
| Thirty and ten are forty. | 30 + 10 = | 40 − 10 = |
| Forty and ten are fifty. | 40 + 10 = | 50 − 10 = |
| Fifty and ten are sixty. | 50 + 10 = 60 | 60 − 10 = |
| Sixty and ten are seventy. | 60 + 10 = 70 | 70 − 10 = |
| Seventy and ten are eighty. | 70 + 10 = 80 | 80 − 10 = |
| Eighty and ten are ninety. | 80 + 10 = 90 | 90 − 10 = |

Ninety and ten are one hundred. 90 + 10 = 100

Count up to a hundred by tens, starting with 40.

40 | | | | | | |

Count up to a hundred by tens, starting with 20.

20 | | | | | | | | |

Count backwards by tens, starting with 100.

100 | | | | | | | | | |

| | | | |
|---|---|---|---|
| 30 + 10 = | + 10 = 60 | 60 + = 70 | 20 − 10 = |
| 90 − 10 = | 50 + 10 = | + 10 = 80 | 90 + 10 = |
| 40 + = 50 | 80 − 10 = | 70 + 10 = | + 10 = 40 |

# Dimes

A dime is worth ten cents.

To find what many dimes are worth, count by tens.
Count ten cents for each dime.

Two dimes are worth ☐ cents.

Three dimes are worth ☐ cents.

Ten dimes are worth 100 cents.

In each group below start at the left.
Count ten cents for each dime.
As you count, write the numbers on the dimes.

Four dimes are worth ☐ ¢.

Six dimes are worth ☐ ¢.

Seven dimes are worth ☐ ¢.

Five dimes are worth ☐ ¢.

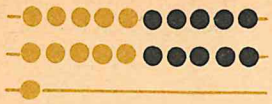
Eight dimes are worth

☐ ¢.

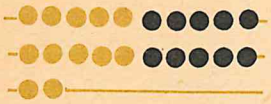
Nine dimes are worth

☐ ¢.

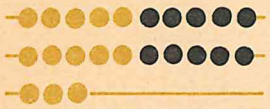
# Counting to One Hundred



21 Twenty-one means twenty and one. $20 + 1 = 21$

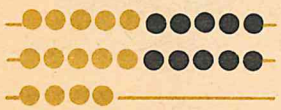


22 Twenty-two means twenty and two. $20 + 2 = 22$

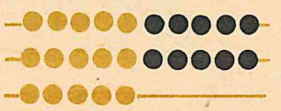


23 Twenty-three means twenty and three. $20 + 3 = 23$

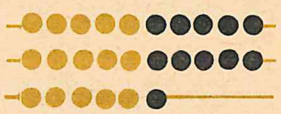
How many beads are shown? Write the answers in the boxes.



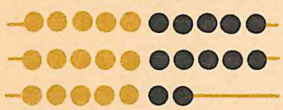
$20 + 4$ ☐



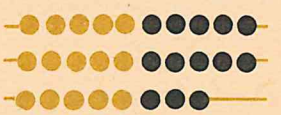
$20 + 5$ ☐



$20 + 6$ ☐



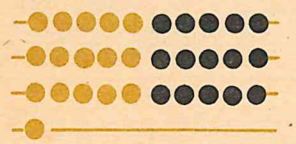
$20 + 7$ ☐



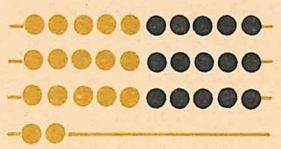
$20 + 8$ ☐

$20 + 9$ ☐

The next number after 29 is ☐ $29 + 1 =$ ☐



31 thirty-one



32 thirty-two

| | | |
|---|---|---|
| $30 + 1 =$ ☐ | $30 + 4 =$ ☐ | $30 + 7 =$ ☐ |
| $30 + 2 =$ ☐ | $30 + 5 =$ ☐ | $30 + 8 =$ ☐ |
| $30 + 3 =$ ☐ | $30 + 6 =$ ☐ | $30 + 9 =$ ☐ |

The next number after 39 is ☐ $39 + 1 =$ ☐

Fill in the missing numbers.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 41 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | 50 |
| 51 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | 60 |
| 61 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | 70 |

Fill in the missing numbers:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 71 | | | | | | | | | 80 |
| 81 | | | | | | | | | 90 |
| 91 | | | | | | | | | 100 |

The next number after 49 is ☐

The next number after 59 is ☐

The next number after 69 is ☐

The next number after 79 is ☐

The number before 90 is ☐

The number before 100 is ☐

Count from 46 to 55.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 46 | | | | | | | | | 55 |

Count from 76 to 85.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 76 | | | | | | | | | 85 |

Count backwards from 30 to 21.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 30 | | | | | | | | | 21 |

Count backwards from 50 to 41.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 50 | | | | | | | | | 41 |

| | | |
|---|---|---|
| 70 + 6 = ☐ | 80 + 3 = ☐ | 60 + 10 = ☐ |
| 90 + 2 = ☐ | 50 + 4 = ☐ | 40 + 5 = ☐ |
| 70 − 1 = ☐ | 60 − 1 = ☐ | 50 − 1 = ☐ |
| 48 − 1 = ☐ | 56 − 1 = ☐ | 63 − 1 = ☐ |
| 57 + 1 = ☐ | 36 + 1 = ☐ | 74 + 1 = ☐ |

# Dimes and Pennies

To find the number of cents in the groups of dimes and pennies, count ten cents for each dime and one cent for each penny.

**Example**

10 20 21 22 23

= 23 ¢

---

= ☐ ¢

= ☐ ¢

= ☐ ¢

= ☐ ¢

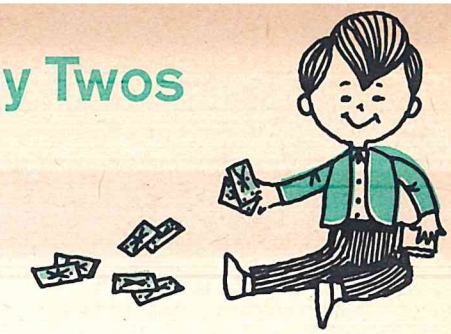
= ☐ ¢

= ☐ ¢

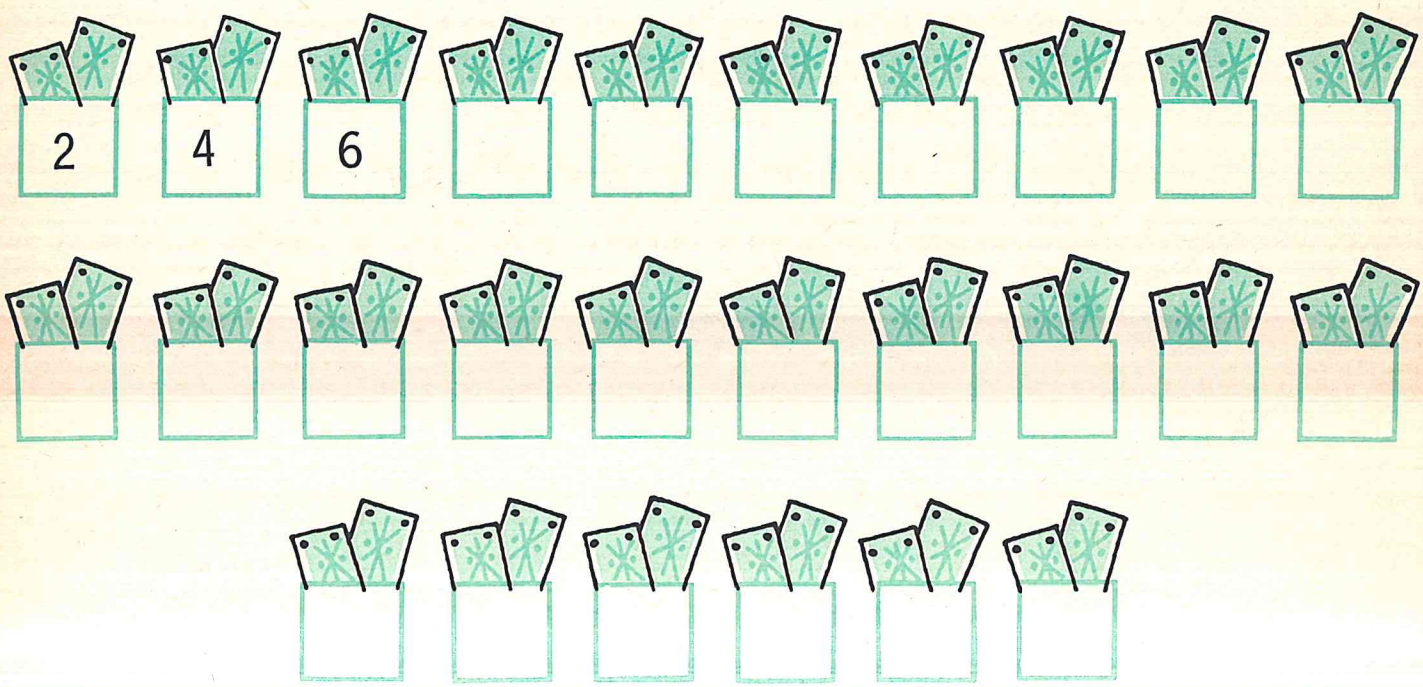
= ☐ ¢

= ☐ ¢

# Up to One Hundred by Twos



John is counting a deck of cards.
To save time, he counts by twos.
Write the numbers he says as he counts.




Count by twos from 80 to 100.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 80 | | | | | | | | | | 100 |

Count by twos from 60 to 80.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 60 | | | | | | | | | | 80 |

Count by twos from 40 to 60.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | 60 |

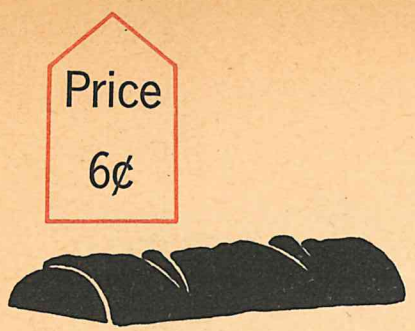
Count backwards by twos from 40.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | | | | | | | | | | |
| | | | | | | | | | | 2 |

Count backwards by twos from 100 to 80.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 100 | | | | | | | | | | 80 |

# Making Change



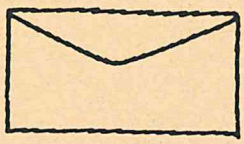

This candy bar costs 6¢. It was paid for with 10¢. It was paid for with a dime. To count out the change, start with 6 and count to 10. Put down a penny for each number after 6.

The number of pennies change is ☐

Each thing below was paid for with a dime.
Make change and write the amount of change.

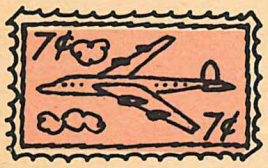
Price 4¢

☐ ¢ Change



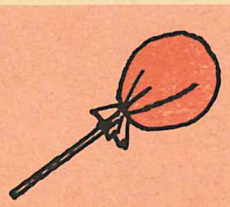
Price 2¢

☐ ¢ Change



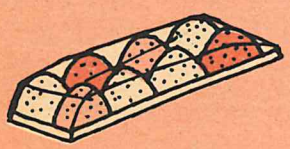

Price 7¢

☐ ¢ Change



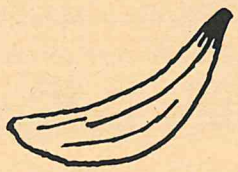
Price 1¢

☐ ¢ Change



Price 5¢

☐ ¢ Change

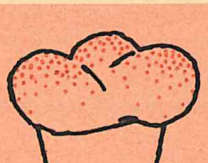


Price 6¢

☐ ¢ Change

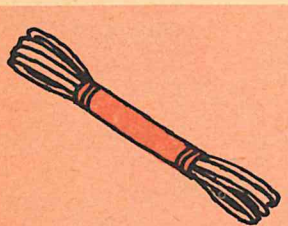
Price 8¢

☐ ¢ Change



Price 5¢

☐ ¢ Change



Price 9¢

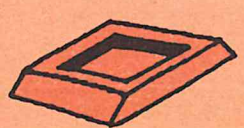
☐ ¢ Change

Price 8¢

☐ ¢ Change

Price 6¢

☐ ¢ Change



Price 3¢

☐ ¢ Change

# Completing Ten

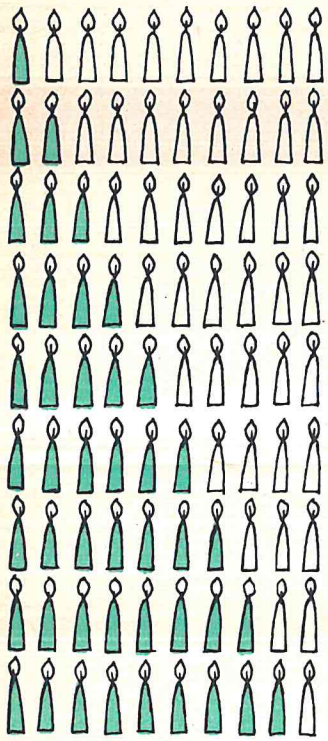
There are ten candles in each row.

Some of the candles in each row are green.

Color the rest red.

Then write the missing numbers in the boxes.

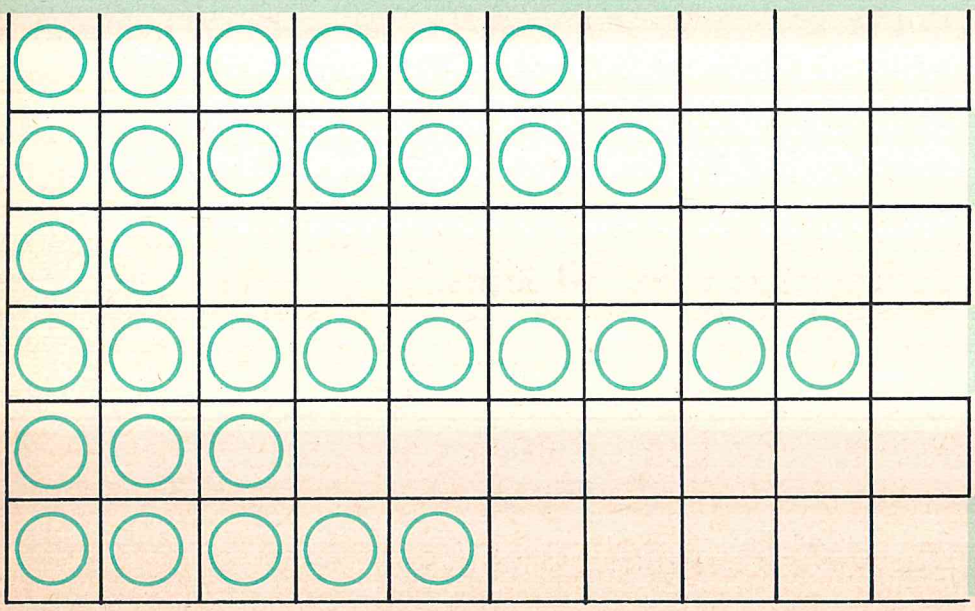
Do one line at a time.



| | | |
|---|---|---|
| 1 candle is green. | ☐ are red. | 1 + ☐ = 10 |
| 2 candles are green. | ☐ are red. | 2 + ☐ = 10 |
| 3 candles are green. | ☐ are red. | 3 + ☐ = 10 |
| 4 candles are green. | ☐ are red. | 4 + ☐ = 10 |
| 5 candles are green. | ☐ are red. | 5 + ☐ = 10 |
| 6 candles are green. | ☐ are red. | 6 + ☐ = 10 |
| 7 candles are green. | ☐ are red. | 7 + ☐ = 10 |
| 8 candles are green. | ☐ are red. | 8 + ☐ = 10 |
| 9 candles are green. | is red. | 9 + ☐ = 10 |

On each line, draw more circles until there are ten.

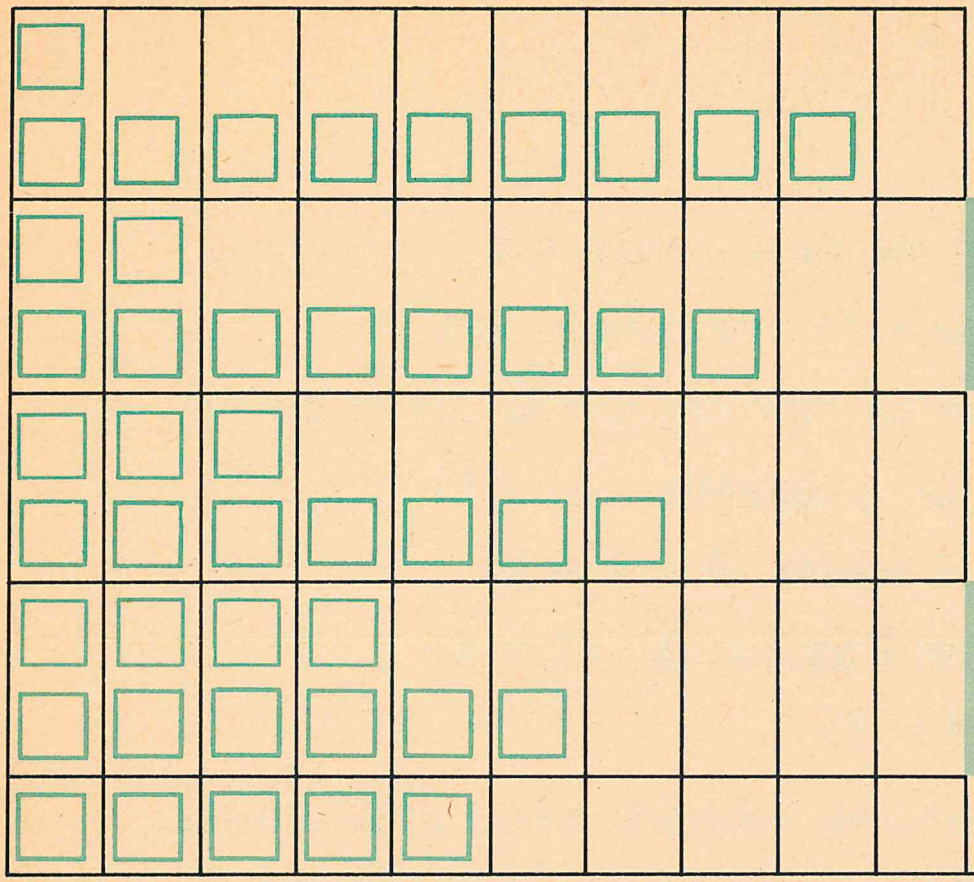
Then fill in the missing number.



| | |
|---|---|
| | 6 and ☐ are 10. |
| | 7 and ☐ are 10. |
| | 2 and ☐ are 10. |
| | 9 and ☐ are 10. |
| | 3 and ☐ are 10. |
| | 5 and ☐ are 10. |

On each line, draw more squares until there are ten.

Then fill in the missing number.



1 and ☐ are 10.

9 and ☐ are 10.

2 and ☐ are 10.

8 and ☐ are 10.

3 and ☐ are 10.

7 and ☐ are 10.

4 and ☐ are 10.

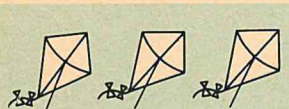
6 and ☐ are 10.

5 and ☐ are 10.

| | | |
|---|---|---|
| 8 + ☐ = 10 | 1 + ☐ = 10 | 4 + ☐ = 10 |
| 3 + ☐ = 10 | 5 + ☐ = 10 | 2 + ☐ = 10 |
| 6 + ☐ = 10 | 9 + ☐ = 10 | 7 + ☐ = 10 |

There are ☐ stars here.

☐ more stars are needed to make 10 stars.



There are ☐ kites here.

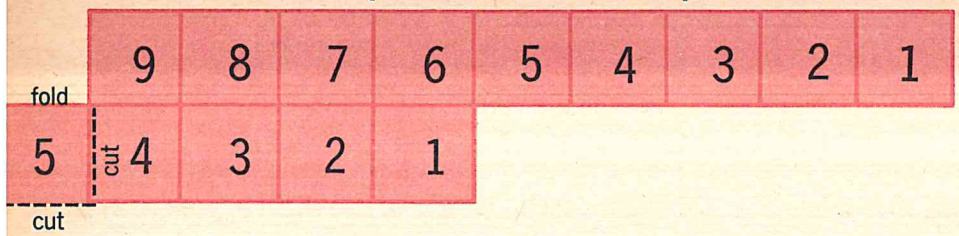
☐ more kites are needed to make 10 kites.

There are ☐ clubs here.

☐ more clubs are needed to make 10 clubs.

# Adding by Completing Ten

Here are 9 squares and 5 squares.




Cut the paper along the lines marked **cut.**

Fold the paper up over the line marked **fold.**

This moves 1 square up from the second line to the first line.

Then the first line has a complete row of 10 squares.

The first line gains 1 square. $9 + 1 = 10$

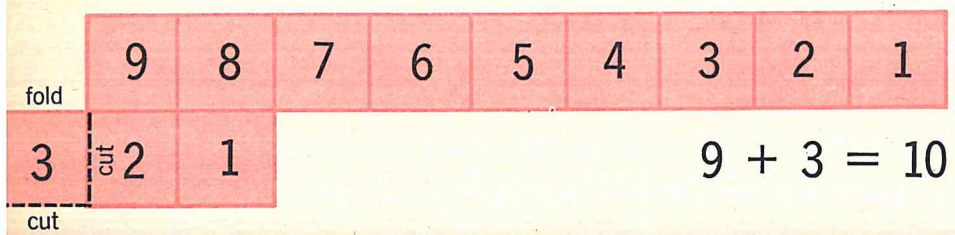
The second line loses 1 square. $5 - 1 = 4$

So $9 + 5 = 10 + 4 = 14$

In each of these exercises, complete a line of 10 squares.

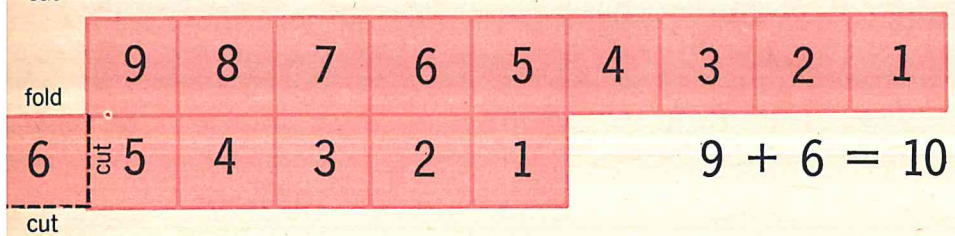
Move 1 square up from the second line to the first line.

Do this by cutting and folding the paper.



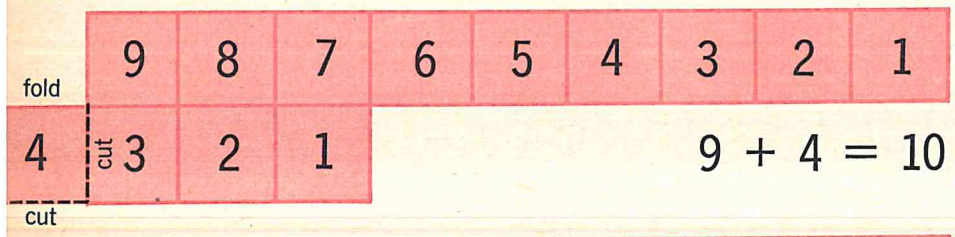

$9 + 1 = 10$ $3 - 1 = 2$

$9 + 3 = 10 + 2 =$ ☐



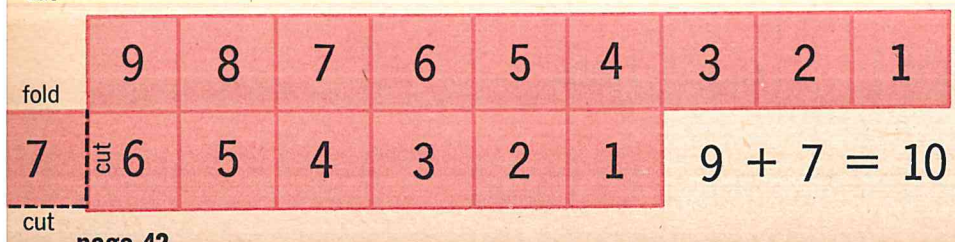

$9 + \square = 10$ $6 - \square = \square$

$9 + 6 = 10 + \square =$ ☐




$9 + \square = 10$ $4 - \square = \square$

$9 + 4 = 10 + \square =$ ☐




$9 + \square = 10$ $7 - \square = \square$

$9 + 7 = 10 + \square =$ ☐

Do these sums in your head by completing ten:

Find 9 + 2.

9 + 1 = 10

2 − 1 = ☐

9 + 2 = 10 + ☐

= ☐

Find 9 + 9.

9 + 1 = 10

9 − ☐ = ☐

9 + 9 = 10 + ☐

= ☐

Find 9 + 8.

9 + ☐ = 10

8 − ☐ = ☐

9 + 8 = 10 + ☐

= ☐

6 10

Find 9 + 3.

9 + ☐ = 10

3 − ☐ = ☐

9 + 3 = 10 + ☐

= ☐

Find 9 + 5.

9 + ☐ = 10

5 − ☐ = ☐

9 + 5 = 10 + ☐

= ☐

Find 9 + 6.

9 + ☐ = 10

6 − ☐ = ☐

9 + 6 = 10 + ☐

= ☐

6 10

6 10

Find 9 + 8.

9 + ☐ = 10

8 − ☐ = ☐

9 + 8 = 10 + ☐

= ☐

Find 9 + 4.

9 + ☐ = 10

4 − ☐ = ☐

9 + 4 = 10 + ☐

= ☐

Find 9 + 7.

9 + ☐ = 10

7 − ☐ = ☐

9 + 7 = 10 + ☐

= ☐

6 10

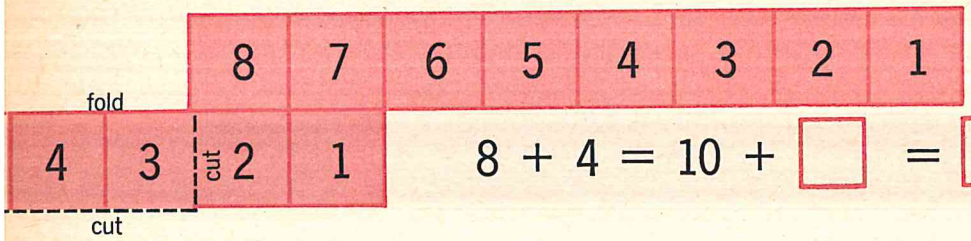
6 10

6 10

In each of these exercises, first complete a line of 10 squares.

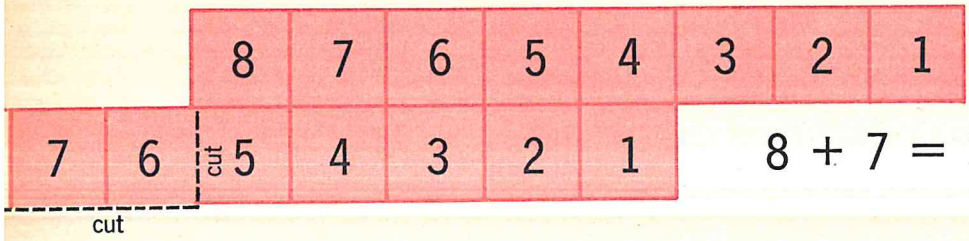
Move 2 squares up from the second line to the first line.
Do this by cutting and folding the paper.

**Remember:** What you add to the first number, you have to take away from the second number.



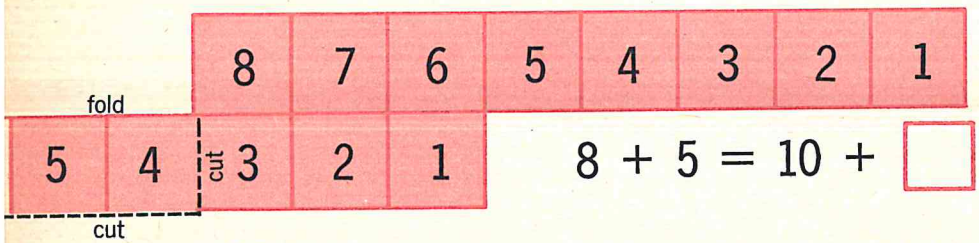

Find 8 + 4.

8 + 4 = 10 + ☐ = ☐



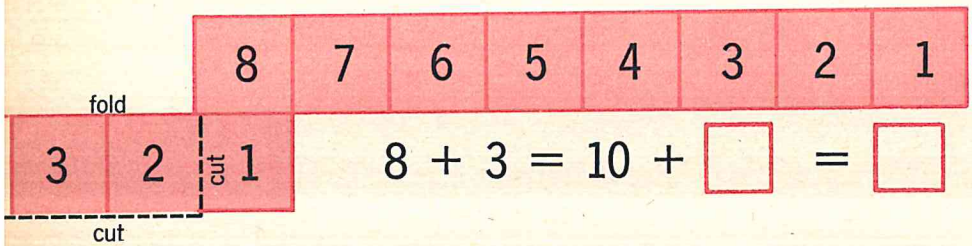

Find 8 + 7.

8 + 7 = 10 + ☐ = ☐



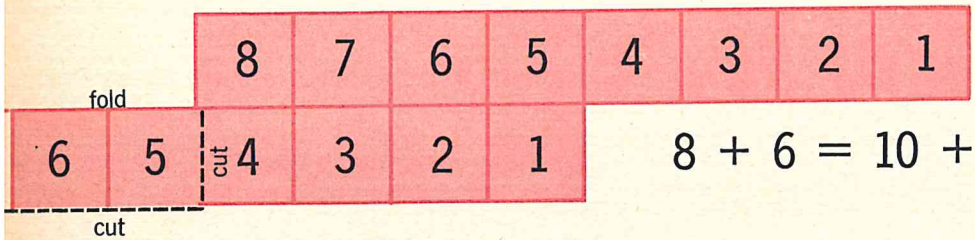

Find 8 + 5.

8 + 5 = 10 + ☐ = ☐



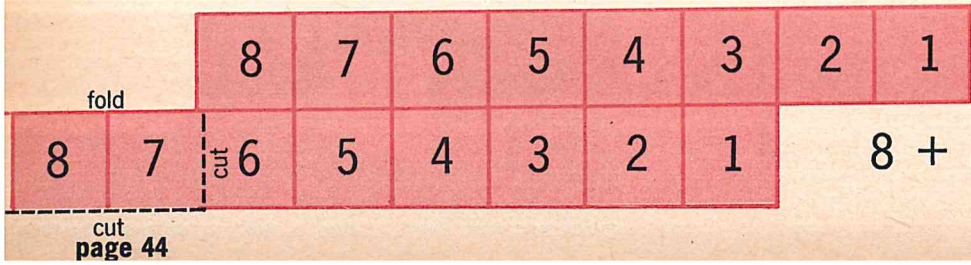

Find 8 + 3.

8 + 3 = 10 + ☐ = ☐




Find 8 + 6.

8 + 6 = 10 + ☐ = ☐




Find 8 + 8.

8 + 8 = 10 + ☐ = ☐

Do these sums in your head by completing ten:

Find 8 + 6.

8 + 2 = 10

6 − ☐ = ☐

8 + 6 = 10 + ☐

= ☐

Find 8 + 3.

8 + ☐ = 10

3 − ☐ = ☐

8 + 3 = 10 + ☐

= ☐

Find 9 + 5.

9 + ☐ = 10

5 − ☐ = ☐

9 + 5 = 10 + ☐

= ☐

| 8 | 6 | 10 |
|---|---|---|

Find 8 + 9.

8 + ☐ = 10

9 − ☐ = ☐

8 + 9 = 10 + ☐

= ☐

Find 8 + 4.

8 + ☐ = 10

4 − ☐ = ☐

8 + 4 = 10 + ☐

= ☐

Find 8 + 8.

8 + ☐ = 10

8 − ☐ = ☐

8 + 8 = 10 + ☐

= ☐

| 8 | 6 | 10 |
|---|---|---|

| 8 | 6 | 10 |
|---|---|---|

Find 9 + 7.

9 + ☐ = 10

7 − ☐ = ☐

9 + 7 = 10 + ☐

= ☐

Find 8 + 5.

8 + ☐ = 10

5 − ☐ = ☐

8 + 5 = 10 + ☐

= ☐

Find 8 + 7.

8 + ☐ = 10

7 − ☐ = ☐

8 + 7 = 10 + ☐

= ☐

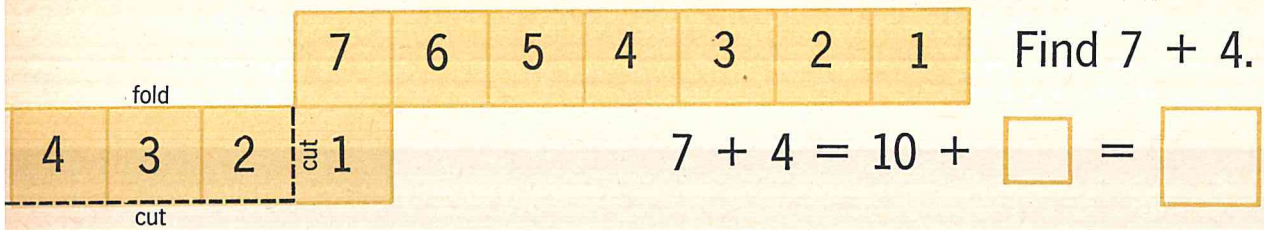
| 8 | 6 | 10 |
|---|---|---|

| 8 | 6 | 10 |
|---|---|---|

| 8 | 6 | 10 |
|---|---|---|

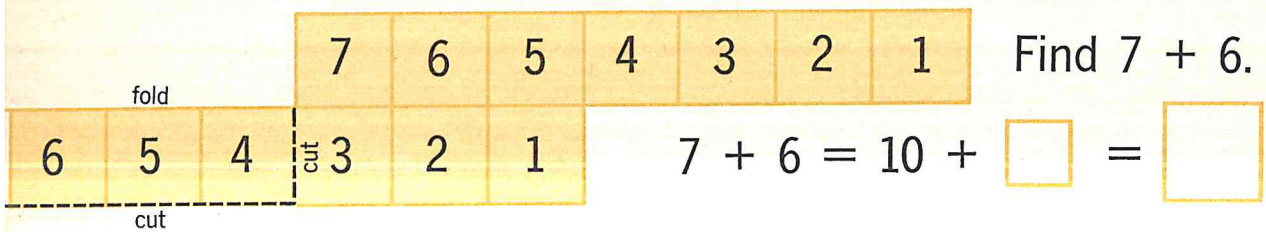
In each of these exercises, first complete a line of 10 squares.
Move 3 squares up from the second line to the first line.
Do this by cutting and folding the paper.

**Remember:** What you add to the first number, you have to take away from the second number.



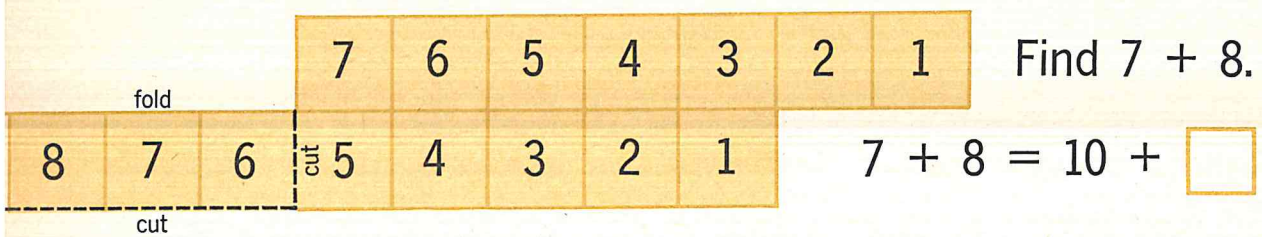

Find 7 + 4.

7 + 4 = 10 + ☐ = ☐



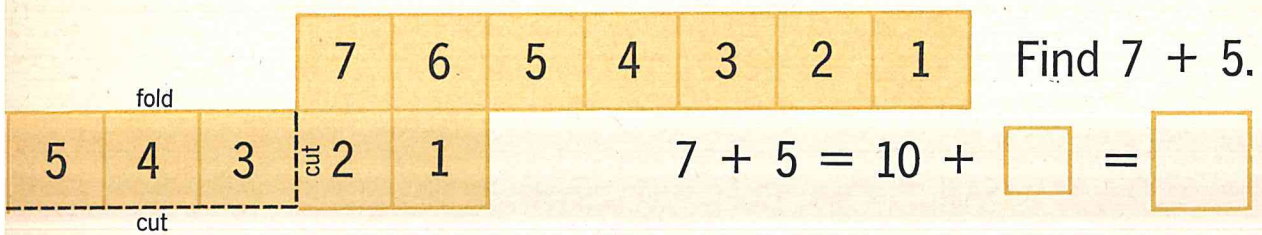

Find 7 + 6.

7 + 6 = 10 + ☐ = ☐



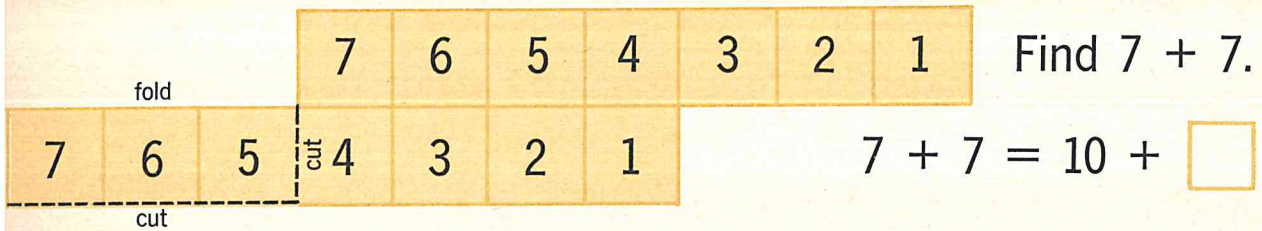

Find 7 + 8.

7 + 8 = 10 + ☐ = ☐



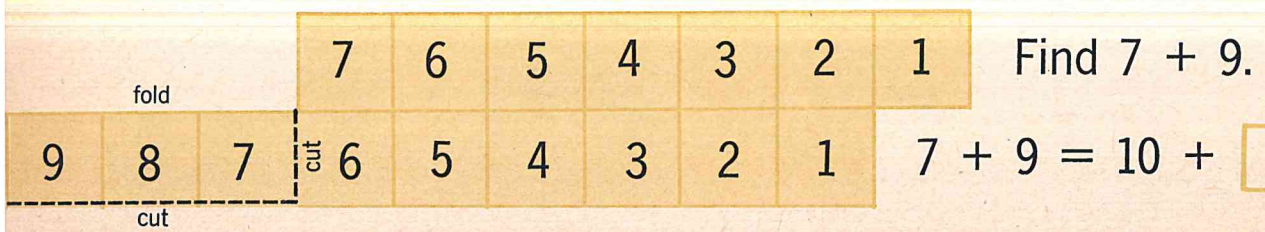

Find 7 + 5.

7 + 5 = 10 + ☐ = ☐




Find 7 + 7.

7 + 7 = 10 + ☐ = ☐




Find 7 + 9.

7 + 9 = 10 + ☐ = ☐

Do these sums in your head by completing ten:

Find 7 + 9.

7 + 3 = 10

9 − ☐ = ☐

7 + 9 = 10 + ☐

= ☐

Find 8 + 5.

8 + ☐ = 10

5 − ☐ = ☐

8 + 5 = 10 + ☐

= ☐

Find 7 + 7.

7 + ☐ = 10

7 − ☐ = ☐

7 + 7 = 10 + ☐

= ☐

7 8 6 10

Find 9 + 6.

9 + ☐ = 10

6 − ☐ = ☐

9 + 6 = 10 + ☐

= ☐

Find 7 + 5.

7 + ☐ = 10

5 − ☐ = ☐

7 + 5 = 10 + ☐

= ☐

Find 7 + 8.

7 + ☐ = 10

8 − ☐ = ☐

7 + 8 = 10 + ☐

= ☐

7 8 6 10

7 8 6 10

Find 7 + 4.

7 + ☐ = 10

4 − ☐ = ☐

7 + 4 = 10 + ☐

= ☐

Find 7 + 6.

7 + ☐ = 10

6 − ☐ = ☐

7 + 6 = 10 + ☐

= ☐

Find 8 + 6.

8 + ☐ = 10

6 − ☐ = ☐

8 + 6 = 10 + ☐

= ☐

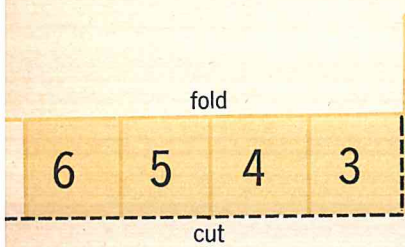
7 8 6 10

7 8 6 10

In each of these exercises, first complete a line of 10 squares.

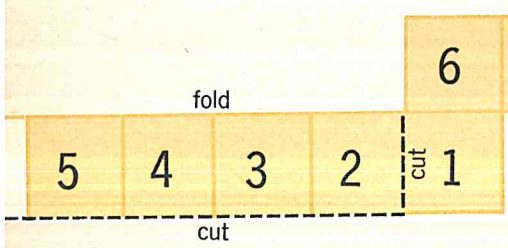
Move 4 squares up from the second line to the first line.
Do this by cutting and folding the paper.

**Remember:** What you add to the first number, you have to take away from the second number.



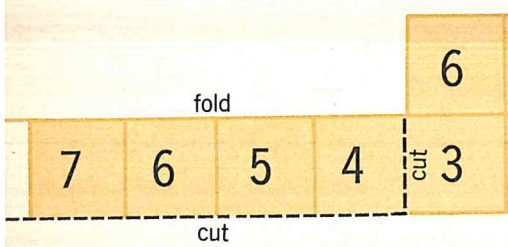

Find 6 + 6.

6 + 6 = 10 + ☐ = ☐



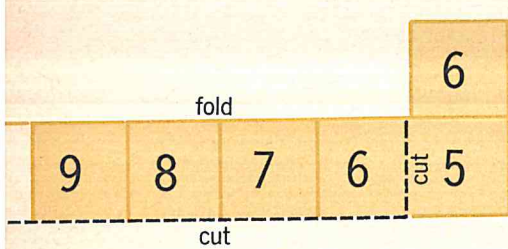

Find 6 + 5.

6+ 5 = 10 + ☐ = ☐



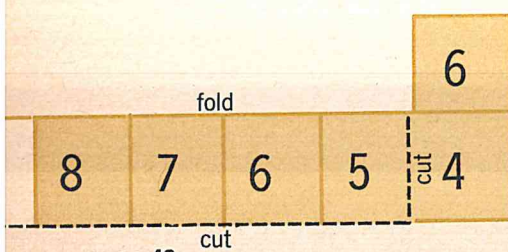

Find 6 + 7.

6 + 7 = 10 + ☐ = ☐




Find 6 + 9.

6 + 9 = 10 + ☐ = ☐




Find 6 + 8.

6 + 8 = 10 + ☐ = ☐

Do these sums in your head by completing ten:

Find 6 + 7.

6 + 4 = 10

7 − ☐ = ☐

6 + 7 = 10 + ☐

= ☐

Find 7 + 9.

7 + ☐ = 10

9 − ☐ = ☐

7 + 9 = 10 + ☐

= ☐

Find 6 + 5.

6 + ☐ = 10

5 − ☐ = ☐

6 + 5 = 10 + ☐

= ☐

Find 8 + 9.

8 + ☐ = 10

9 − ☐ = ☐

8 + 9 = 10 + ☐

= ☐

Find 6 + 6.

6 + ☐ = 10

6 − ☐ = ☐

6 + 6 = 10 + ☐

= ☐

Find 6 + 8.

6 + ☐ = 10

8 − ☐ = ☐

6 + 8 = 10 + ☐

= ☐

Find 7 + 6.

7 + ☐ = 10

6 − ☐ = ☐

7 + 6 = 10 + ☐

= ☐

Find 9 + 4.

9 + ☐ = 10

4 − ☐ = ☐

9 + 4 = 10 + ☐

= ☐

Find 6 + 9.

6 + ☐ = 10

9 − ☐ = ☐

6 + 9 = 10 + ☐

= ☐

# Changing Places and Completing Ten

Do these sums in your head.

First let the numbers change places.

Then complete ten.

Find 5 + 6.

5 + 6 = 6 + 5

6 + 4 = 10

5 − ☐ = ☐

6 + 5 = 10 + ☐

= ☐

Find 5 + 7.

5 + 7 = 7 + 5

7 + ☐ = 10

5 − ☐ = ☐

7 + 5 = 10 + ☐

= ☐

Find 5 + 8.

5 + 8 = 8 + 5

8 + ☐ = 10

5 − ☐ = ☐

8 + 5 = 10 + ☐

= ☐

Find 5 + 9.

5 + 9 = 9 + 5

9 + ☐ = 10

5 − ☐ = ☐

9 + 5 = 10 + ☐

= ☐

Find 4 + 7.

4 + 7 = 7 + 4

7 + ☐ = 10

4 − ☐ = ☐

7 + 4 = 10 + ☐

= ☐

Find 4 + 8.

4 + 8 = 8 + 4

8 + ☐ = 10

4 − ☐ = ☐

8 + 4 = 10 + ☐

= ☐

Find 4 + 9.

4 + 9 = 9 + 4

9 + ☐ = 10

4 − ☐ = ☐

9 + 4 = 10 + ☐

= ☐

Find 3 + 8

3 + 8 = 8 + 3

8 + ☐ = 10

3 − ☐ = ☐

8 + 3 = 10 + ☐

= ☐

Find 3 + 9.

3 + 9 = 9 + 3

9 + ☐ = 10

3 − ☐ = ☐

9 + 3 = 10 + ☐

= ☐

# Adding in More Than One Way

**Example**

$$\begin{array}{r} 3 \\ 2 \\ 2 \\ \hline 7 \end{array}$$

Adding from the top down, remember that $3 + 2 = 5$, and $5 + 2 = 7$.

Adding from the bottom up, remember that $2 + 2 = 4$, and $4 + 3 = 7$.

In the exercises below, first add from the top down.

Then check your answer by adding from the bottom up.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 4 | 5 | 3 | 6 | 4 | 3 | 1 | 5 | 2 | 3 | 5 |
| 2 | 1 | 1 | 7 | 2 | 2 | 4 | 2 | 1 | 3 | 4 | 1 |
| 5 | 3 | 4 | 2 | 2 | 2 | 2 | 4 | 3 | 5 | 4 | 1 |
| | | | | | | | | | | | |

**Example** Add $7 + 5$

Adding a little at a time:

$7 + 5 = 7 + 2 + 2 + 1$

$= \square + 2 + 1$

$= \square + 1$

$= \square$

Completing ten:

$7 + 5 = 10 + \square$

$= \square$

Do each exercise in two ways.

$7 + 6$

$= 7 + \square + \square + \square$

$= \square + \square + \square$

$= \square + \square = \square$

$7 + 6 = 10 + \square$

$= \square$

$8 + 4$

$= 8 + \square + \square$

$= \square + \square$

$= \square$

$8 + 4 = 10 + \square$

$= \square$

$9 + 3$

$= 9 + \square + \square$

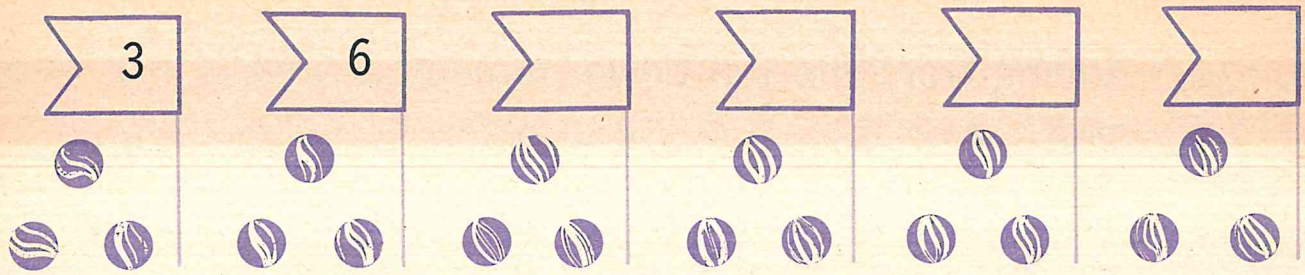
$= \square + \square$

$= \square$

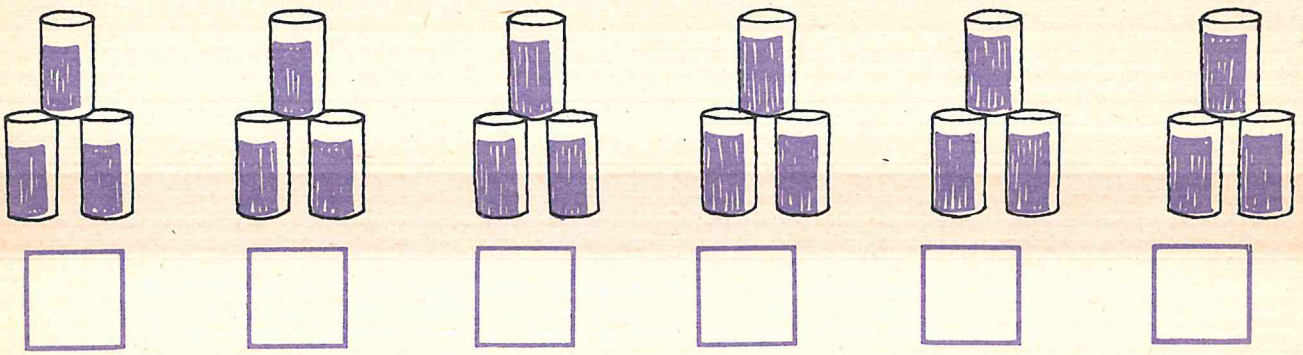
$9 + 3 = 10 + \square$

$= \square$

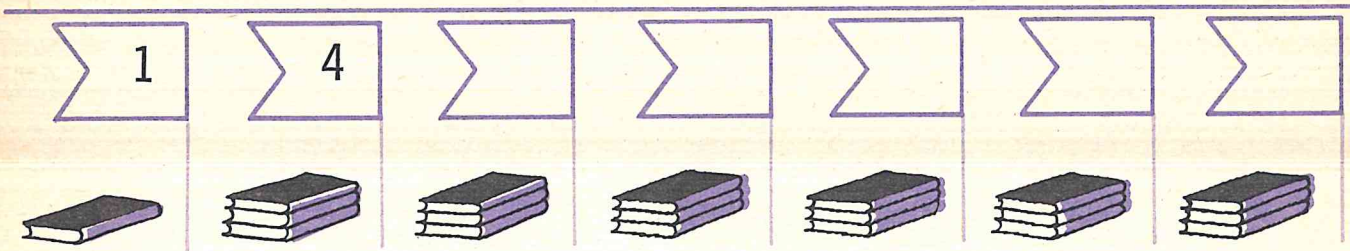
# Counting by Threes



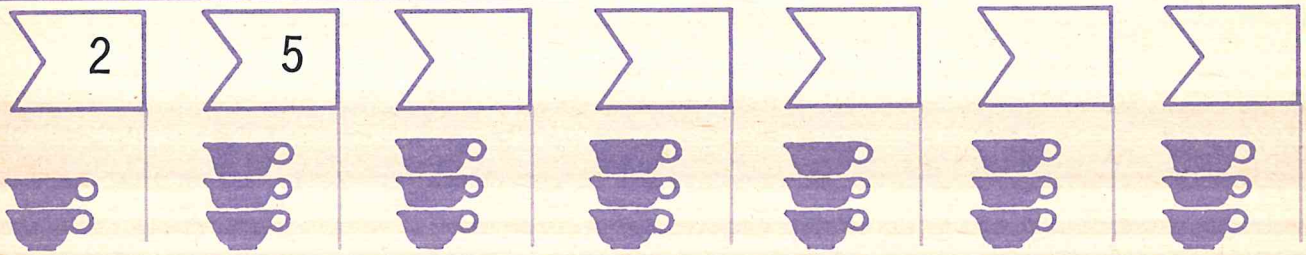

Write on each flag the number of marbles that are to the left of it.



Count these cans three at a time.
Start at the left.
Write in the boxes the numbers you say as you count.




Write on each flag the number of books that are to the left of it.




Write on each flag the number of cups that are to the left of it.

Starting with 1, count by threes up to 10.

Starting with 4, count by threes up to 13.

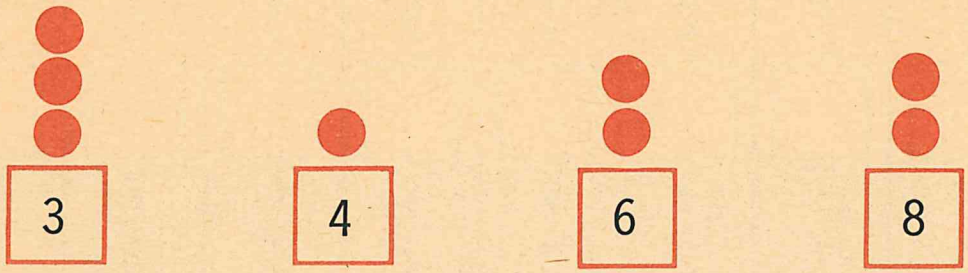
Starting with 8, count by threes up to 17.

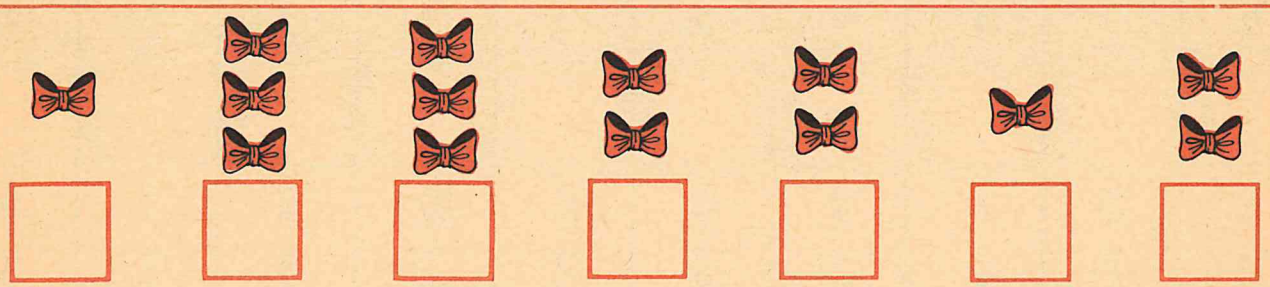
Starting with 9, count by threes up to 18.

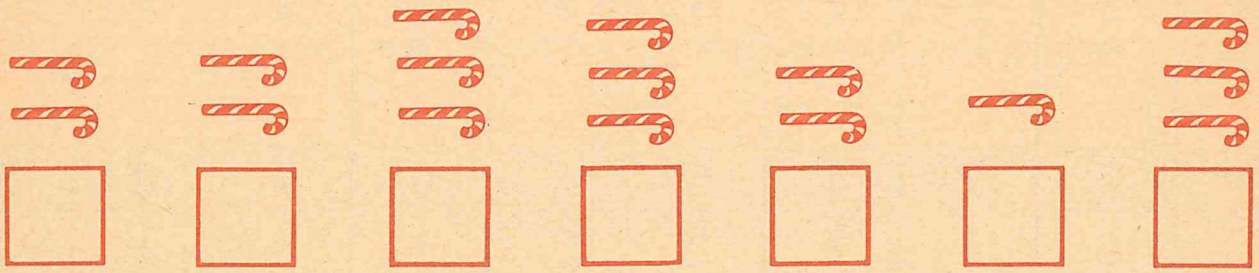
# Mixed Groups

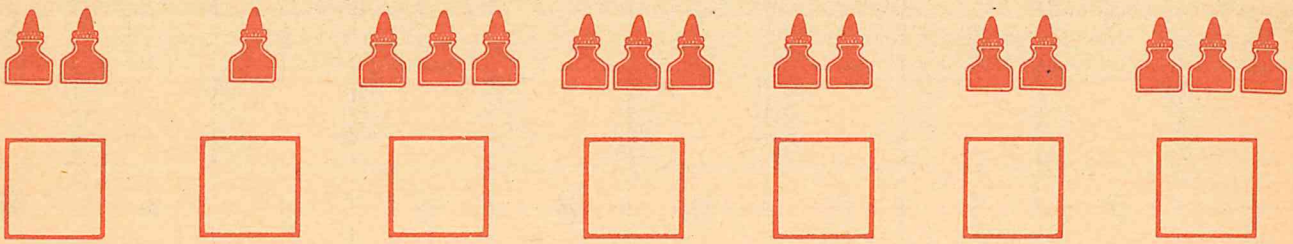
Count by groups from left to right.
In the box under each group write down the new total.

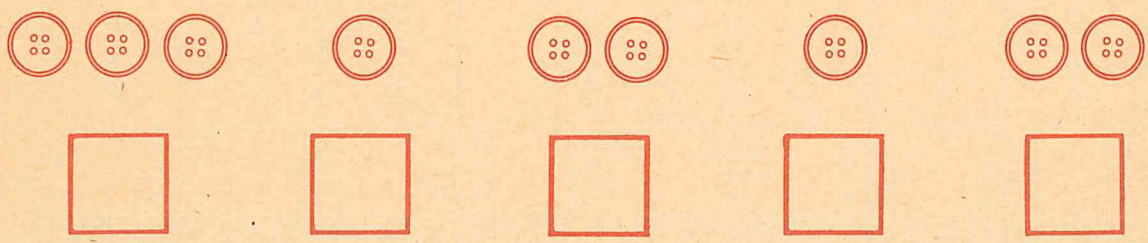
**Example**

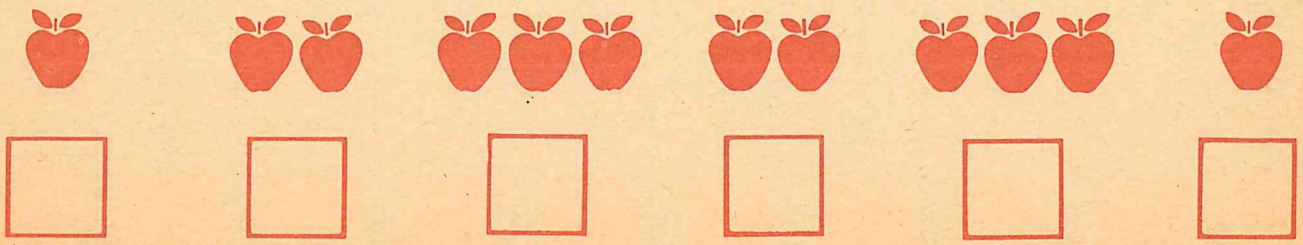








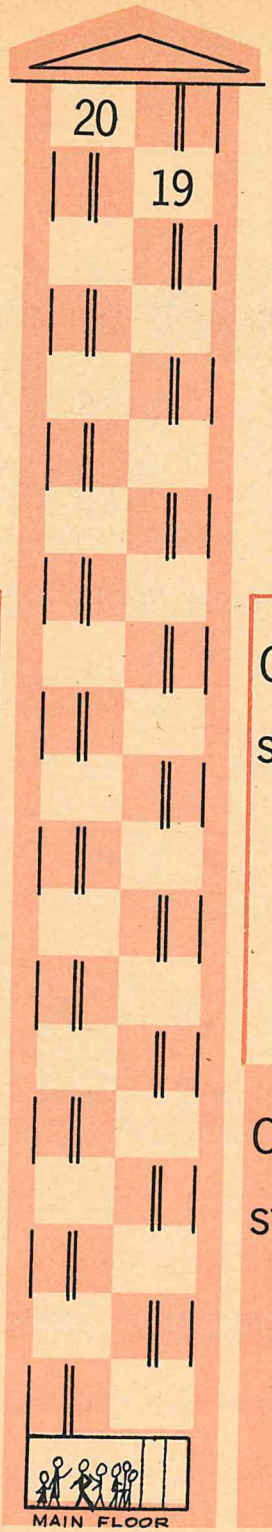


Add these numbers:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3<br>3<br>3<br>— | 2<br>2<br>2<br>— | 3<br>3<br>2<br>— | 3<br>2<br>2<br>— | 3<br>1<br>2<br>— | 1<br>1<br>3<br>— | 2<br>1<br>3<br>— | 1<br>2<br>3<br>— | 1<br>2<br>1<br>— | 1<br>3<br>1<br>— |
| 2<br>3<br>2<br>— | 2<br>1<br>2<br>— | 3<br>2<br>1<br>— | 3<br>2<br>3<br>— | 5<br>3<br>2<br>— | 4<br>2<br>3<br>— | 6<br>1<br>2<br>— | 7<br>3<br>2<br>— | 4<br>2<br>2<br>— | 4<br>3<br>3<br>— |
| 5<br>3<br>3<br>— | 8<br>1<br>1<br>— | 8<br>2<br>2<br>— | 9<br>2<br>2<br>— | 8<br>3<br>3<br>— | 6<br>2<br>2<br>— | 10<br>2<br>2<br>— | 9<br>3<br>3<br>— | 7<br>2<br>2<br>— | 9<br>3<br>2<br>— |
| 3<br>1<br>2<br>1<br>— | 3<br>2<br>2<br>2<br>— | 3<br>2<br>2<br>1<br>— | 4<br>2<br>3<br>1<br>— | 5<br>2<br>2<br>3<br>— | 2<br>3<br>3<br>3<br>— | 6<br>1<br>2<br>3<br>— | 7<br>1<br>1<br>1<br>— | 8<br>1<br>2<br>1<br>— | 5<br>2<br>1<br>3<br>— |
| 6<br>3<br>2<br>3<br>— | 2<br>3<br>2<br>3<br>— | 1<br>3<br>3<br>1<br>— | 8<br>1<br>3<br>1<br>— | 9<br>2<br>2<br>2<br>— | 8<br>3<br>3<br>3<br>— | 6<br>3<br>1<br>2<br>— | 5<br>2<br>2<br>2<br>— | 4<br>3<br>3<br>2<br>— | 8<br>1<br>1<br>1<br>— |
| 9<br>2<br>2<br>3<br>— | 6<br>0<br>2<br>1<br>— | 4<br>2<br>1<br>0<br>— | 5<br>1<br>1<br>0<br>— | 6<br>2<br>2<br>0<br>— | 3<br>1<br>0<br>2<br>— | 7<br>0<br>1<br>2<br>— | 8<br>0<br>0<br>1<br>— | 10<br>2<br>2<br>2<br>— | 10<br>3<br>3<br>3<br>— |

# Counting Backwards by Twos and Threes

The elevator on this side starts down from the 20th floor. It stops at each even-numbered floor. Start at the top, and write at each stop the number of the floor.




The elevator on this side starts down from the 19th floor. It stops at each odd-numbered floor. Start at the top, and write at each stop the number of the floor.

Count backwards by twos, starting with 16.

| | | | |
|---|---|---|---|
| 16 | | | |
| | | | |

Count backwards by threes, starting with 18.

| | | |
|---|---|---|
| 18 | | |
| | | |

Count backwards by twos, starting with 15.

| | | | |
|---|---|---|---|
| 15 | | | |
| | | | |

Count backwards by threes, starting with 17.

| | | |
|---|---|---|
| 17 | | |
| | | |

Count backwards by threes, starting with 16.

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |

Count backwards by twos, starting with 18.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

# Taking Away by Counting Backwards

To take away 1, count backwards by ones in one step.

| | | | |
|---|---|---|---|
| 19 − 1 = ☐ | 15 − 1 = ☐ | 13 − 1 = ☐ | 16 − 1 = ☐ |
| 12 − 1 = ☐ | 14 − 1 = ☐ | 11 − 1 = ☐ | 17 − 1 = ☐ |

To take away 2, count backwards by twos in one step.

| | | | |
|---|---|---|---|
| 18 − 2 = ☐ | 16 − 2 = ☐ | 14 − 2 = ☐ | 12 − 2 = ☐ |
| 17 − 2 = ☐ | 15 − 2 = ☐ | 13 − 2 = ☐ | 11 − 2 = ☐ |

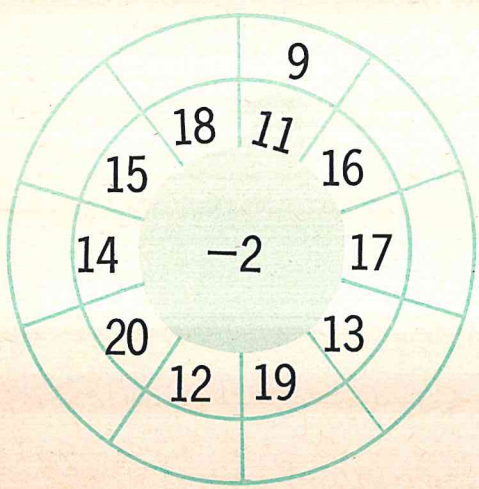
To take away 3, count backwards by threes in one step.

| | | | |
|---|---|---|---|
| 18 − 3 = ☐ | 15 − 3 = ☐ | 12 − 3 = ☐ | 9 − 3 = ☐ |
| 17 − 3 = ☐ | 14 − 3 = ☐ | 11 − 3 = ☐ | 8 − 3 = ☐ |
| 16 − 3 = ☐ | 13 − 3 = ☐ | 10 − 3 = ☐ | 7 − 3 = ☐ |

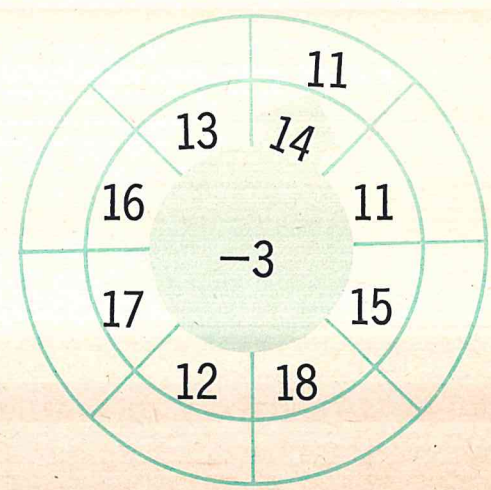
Subtract.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 19 | 16 | 17 | 14 | 15 | 16 | 11 | 12 | 14 | 18 |
| −1 | −2 | −3 | −2 | −1 | −3 | −2 | −3 | −3 | −2 |
| ☐ | | ☐ | | ☐ | | ☐ | | ☐ | |

Take away 2 from each number in the inner ring. Write the answer in the outer ring.




Take away 3 from each number in the inner ring. Write the answer in the outer ring.



# Taking Away a Little at a Time

You can take away a larger number by taking away a little at a time.

**Example**

Find 11 − 4.

You know that 4 = 2 + 2.
First take away 2: 11 − 2 = 9
Then take away another 2: 9 − 2 = 7
So 11 − 4 = 7

**Example**

Find 13 − 5.

You know that 5 = 3 + 2.
First take away 3: 13 − 3 = 10
Then take away 2: 10 − 2 = 8
So 13 − 5 = 8

Find 15 − 4.
Use 4 = 2 + 2.
15 − 2 = 13
13 − 2 = 11

Find 12 − 4.
Use 4 = 2 + 2.
12 − 2 = ☐
☐ − 2 = ☐

Find 13 − 4.
Use 4 = 2 + 2.
13 − 2 = ☐
☐ − 2 = ☐

Find 17 − 4.
Use 4 = 2 + 2.
17 − 2 = ☐
☐ − 2 = ☐

Find 16 − 4.
Use 4 = 2 + 2.
16 − 2 = ☐
☐ − 2 = ☐

Find 20 − 4.
Use 4 = 2 + 2.
20 − 2 = ☐
☐ − 2 = ☐

Find 14 − 4.
Use 4 = 2 + 2.
14 − 2 = ☐
☐ − 2 = ☐

Find 19 − 4.
Use 4 = 2 + 2.
19 − 2 = ☐
☐ − 2 = ☐

Find 18 − 4.
Use 4 = 2 + 2.
18 − 2 = ☐
☐ − 2 = ☐

Find 16 − 5.
Use 5 = 3 + 2.
16 − 3 = ☐
☐ − 2 = ☐

Find 14 − 5.
Use 5 = 3 + 2.
14 − 3 = ☐
☐ − 2 = ☐

Find 17 − 5.
Use 5 = 3 + 2.
17 − 3 = ☐
☐ − 2 = ☐

Find 11 − 5.

Use 5 = 3 + 2.

11 − 3 = ☐

☐ − 2 = ☐

Find 15 − 5.

Use 5 = 3 + 2.

15 − 3 = ☐

☐ − 2 = ☐

Find 18 − 5.

Use 5 = 3 + 2.

18 − 3 = ☐

☐ − 2 = ☐

Find 20 − 5.

Use 5 = 3 + 2.

20 − 3 = ☐

☐ − 2 = ☐

Find 19 − 5.

Use 5 = 3 + 2.

19 − 3 = ☐

☐ − 2 = ☐

Find 12 − 5.

Use 5 = 3 + 2.

12 − 3 = ☐

☐ − 2 = ☐

Find 16 − 6.

Use 6 = 3 + 3.

16 − 3 = ☐

☐ − 3 = ☐

Find 14 − 6.

Use 6 = 3 + 3.

14 − 3 = ☐

☐ − 3 = ☐

Find 15 − 6.

Use 6 = 3 + 3.

15 − 3 = ☐

☐ − 3 = ☐

Find 17 − 6.

Use 6 = 3 + 3.

17 − 3 = ☐

☐ − 3 = ☐

Find 18 − 6.

Use 6 = 3 + 3.

18 − 3 = ☐

☐ − 3 = ☐

Find 19 − 6.

Use 6 = 3 + 3.

19 − 3 = ☐

☐ − 3 = ☐

Find 11 − 6.

Use 6 = 3 + 3.

11 − 3 = ☐

☐ − 3 = ☐

Find 13 − 6.

Use 6 = 3 + 3.

13 − 3 = ☐

☐ − 3 = ☐

Find 12 − 6.

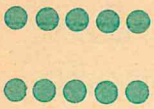
Use 6 = 3 + 3.

12 − 3 = ☐

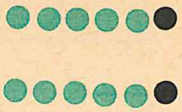
☐ − 3 = ☐

# Doubles and Near Doubles

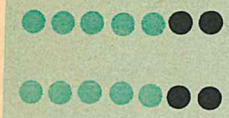
To double a number, add the number to itself.



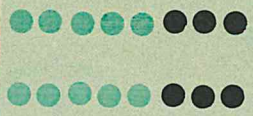
$5 + 5 =$ ☐



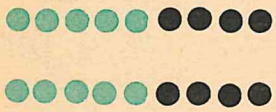
$6 + 6 =$ ☐



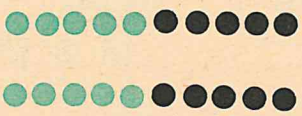
$7 + 7 =$ ☐



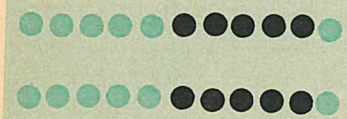
$8 + 8 =$ ☐



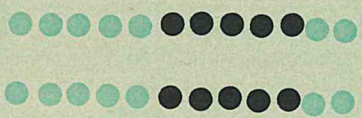
$9 + 9 =$ ☐



$10 + 10 =$ ☐



$11 + 11 =$ ☐

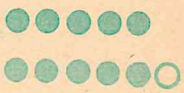


$12 + 12 =$ ☐

The doubles help us think out some other sums.

**Example**
Find 5 + 6.

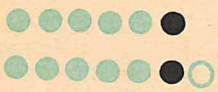
6 is 1 more than 5.



Then 5 + 6 is 1 more than 5 + 5.

So 5 + 6 = 10 + 1 = 11.

Find 6 + 7.

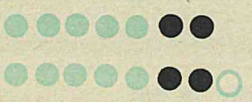


7 is 1 more than 6.

6 + 6 = ☐

6 + 7 = ☐

Find 7 + 8.



8 is 1 more than 7.

7 + 7 = ☐

7 + 8 = ☐

Find 8 + 9.

9 is 1 more than 8.

8 + 8 = ☐

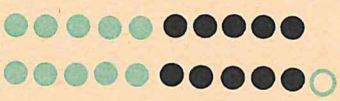
8 + 9 = ☐

Find 4 + 5.

4 + 4 = ☐

4 + 5 = ☐

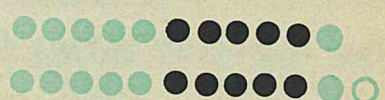
Find 10 + 11.



10 + 10 = ☐

10 + 11 = ☐

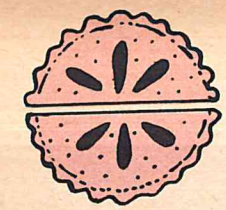
Find 11 + 12.



11 + 11 = ☐

11 + 12 = ☐

# One Half and One Fourth



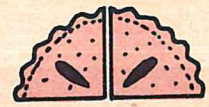
This pie has been cut in half.

There are ☐ halves of a pie in a whole pie.

The two halves are equal.

half of a pie

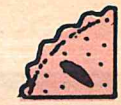
half of a pie



This half of a pie has been cut in half.

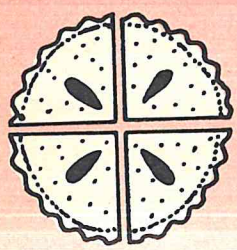
Half of a half is called a **fourth.**

The two fourths are equal.

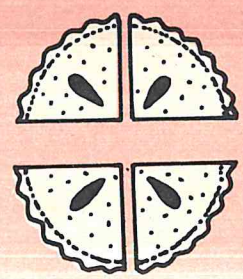


fourth of a pie

fourth of a pie



Here both halves of the pie have been cut in half.

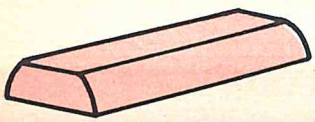


There are ☐ fourths in this half.

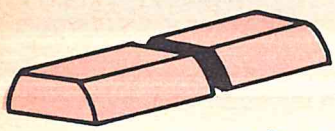
There are ☐ fourths in this half.

There are ☐ fourths of a pie in a whole pie.

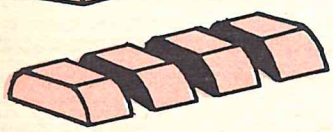
To cut a candy bar into fourths,
first cut it in half.
Then cut each half in half.



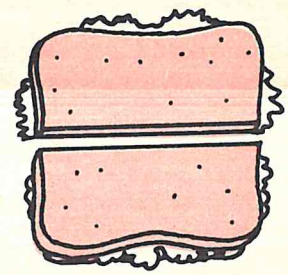
whole candy bar



There are ☐ halves.

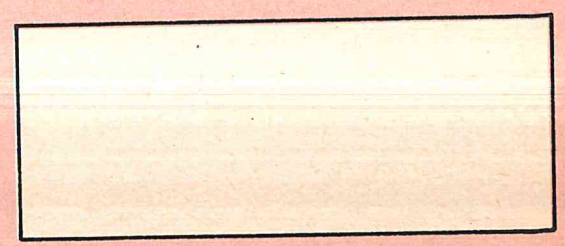


There are ☐ fourths.



This sandwich has been cut in half.
Draw a line that cuts the sandwich into fourths.

Draw up and down lines to divide this rectangle into fourths.
Color the first fourth orange.
Color the third fourth green.



☐ halves of a pie make a whole pie.

☐ fourths of a pie make a whole pie.

☐ fourths of a pie make half a pie.

John ate one fourth of a candy bar.

Henry ate twice as much as John.

Henry ate { one fourth of a bar. / one half of a bar. / a whole bar. }

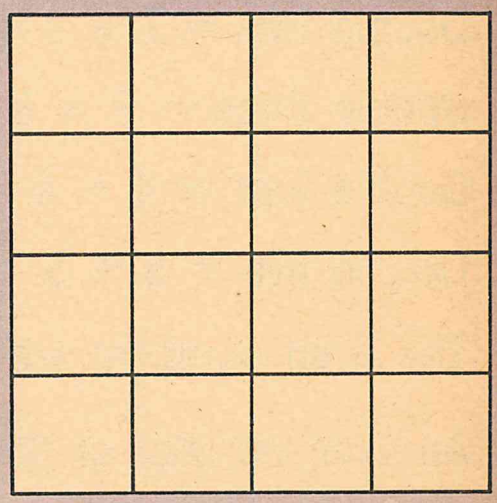
Underline the right answer.

There are 16 small squares in this large square.

Color the two lines that cut the large square into fourths.

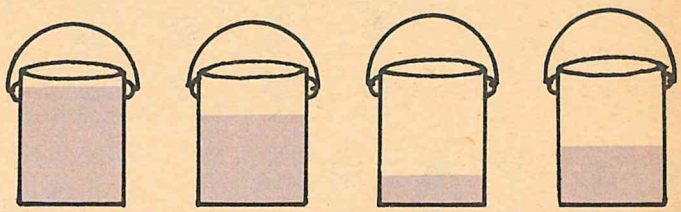
Fill in each fourth with a different color.

Each fourth has ☐ small squares.



Here are some cans of paint.

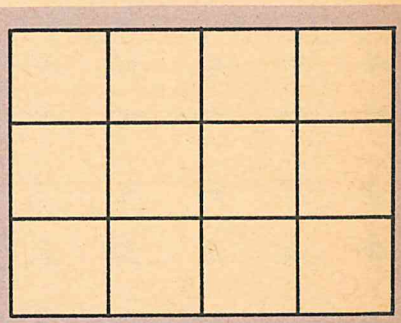
Draw a circle around the can that is one fourth full.



This rectangle has ☐ squares.

Cut the rectangle into fourths.

Fill in each fourth with a different color.

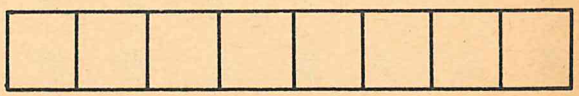


There are ☐ squares in each fourth of the rectangle.

This rectangle has ☐ squares.

Cut the rectangle into fourths.

Fill in each fourth with a different color.



There are ☐ squares in each fourth of the rectangle.

# Half of an Even Number

Count by twos up to 20.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

These numbers are all even.

Compare them with the double numbers.

Double one = 1 + 1 = ☐

Double two = 2 + 2 = ☐

Double three = 3 + 3 = ☐

Double four = 4 + 4 = ☐

Double five = 5 + 5 = ☐

Double six = 6 + 6 = ☐

Double seven = 7 + 7 = ☐

Double eight = 8 + 8 = ☐

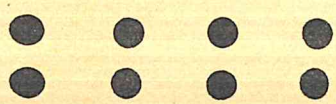
Double nine = 9 + 9 = ☐

Double ten = 10 + 10 = ☐

The even numbers are the double numbers.

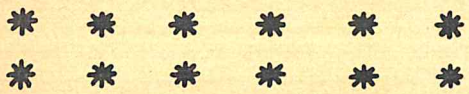
An even number of things can be arranged in two equal rows.

**Example** 8 = 4 + 4.



Double 4 is 8.
Half of 8 is 4.

Double ☐ is 10. Half of 10 is ☐

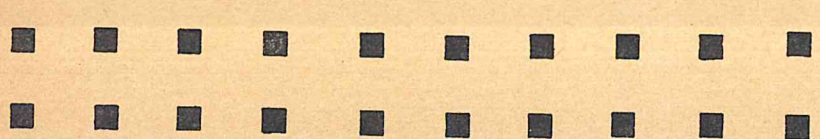


Double ☐ is 12. Half of 12 is ☐

Double ☐ is 14. Half of 14 is ☐

Double ☐ is 16. Half of 16 is ☐

Double ☐ is 18.
Half of 18 is ☐



Double ☐ is 20.
Half of 20 is ☐

Count to 100 by 10's.

| 10 | 20 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|

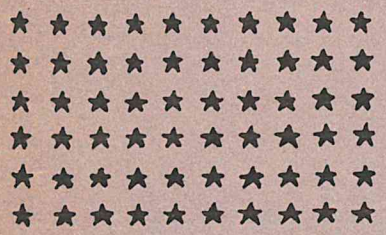
Each group of stars below is arranged in rows. There are ten stars in each row. Count the stars in each group by tens.

There are ____ stars in this group.

Draw a line between the second and third row.

The line divides the group in half.

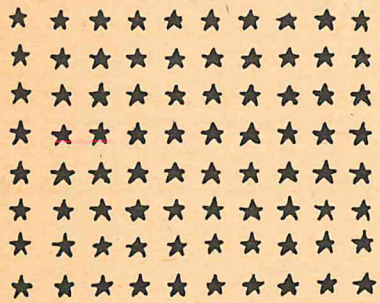
There are ____ stars in each half.



There are ____ stars in this group.

Draw a line that divides the group in half.

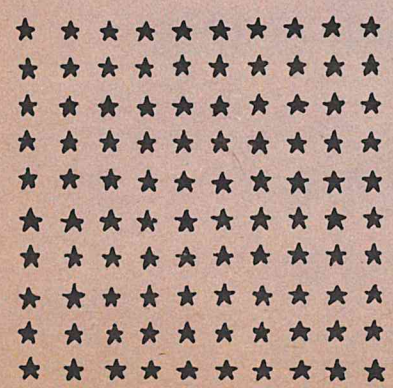
There are ____ stars in each half.



There are ____ stars in this group.

Draw a line that divides the group in half.

There are ____ stars in each half.



There are ____ stars in this group.

Draw a line that divides the group in half.

There are ____ stars in each half.

# Fourths

Here is a set of 4 children.

First draw a line that divides the set in half. Then divide each half in half.

You have divided the set into fourths.

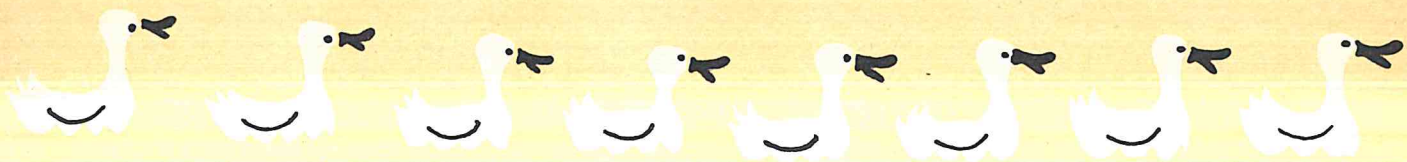
A fourth is one of four equal parts.

There are ☐ fourths in the whole set.

There is ☐ child in each fourth.

A fourth of 4 is ☐

Here is a set of 8 ducks. Divide the set into fourths.

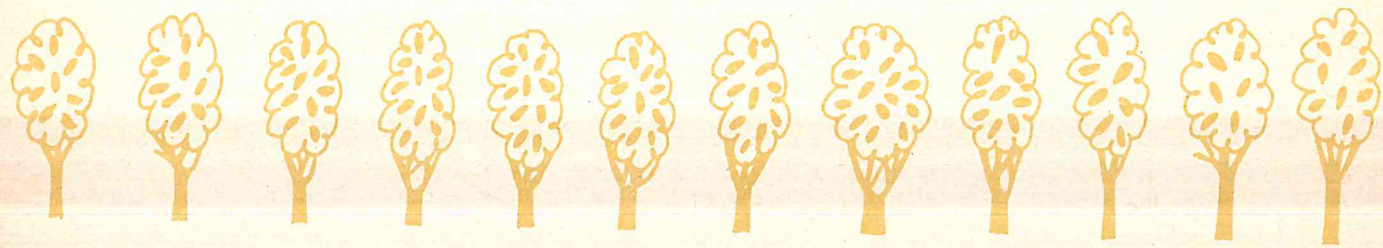


There are ☐ fourths in the whole set.

There are ☐ ducks in each fourth.

A fourth of 8 is ☐

Here is a set of 12 trees. Divide the set into fourths.



There are ☐ fourths in the whole set.

There are ☐ trees in each fourth.

A fourth of 12 is ☐

Half of 4 is ☐

Half of 8 is ☐

Half of 12 is ☐

A fourth of 4 is ☐

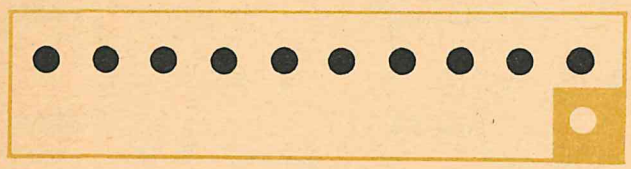
A fourth of 8 is ☐

A fourth of 12 is ☐

# Four Stories

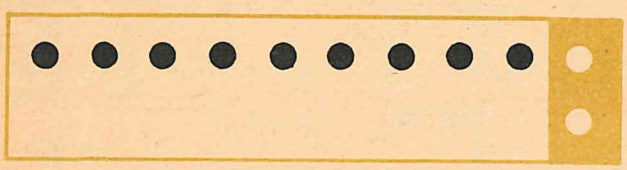
Each of these drawings tells four number stories.

Write in the missing numbers in each story.



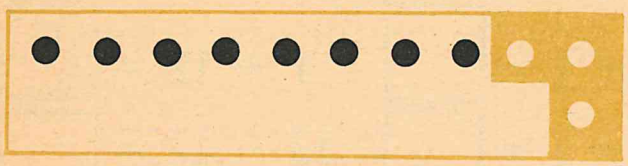
$10 + 1 = \square$ $\quad 1 + 10 = \square$

$11 - 1 = \square$ $\quad 11 - 10 = \square$



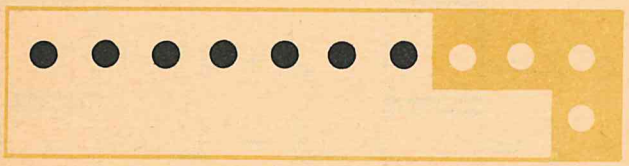
$9 + 2 = \square$ $\quad 2 + 9 = \square$

$11 - 2 = \square$ $\quad 11 - 9 = \square$



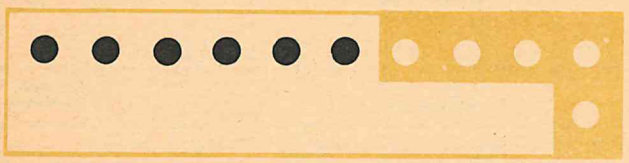
$8 + 3 = \square$ $\quad 3 + 8 = \square$

$11 - 3 = \square$ $\quad 11 - 8 = \square$



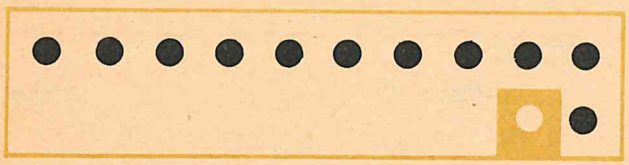
$7 + 4 = \square$ $\quad 4 + 7 = \square$

$11 - 4 = \square$ $\quad 11 - 7 = \square$



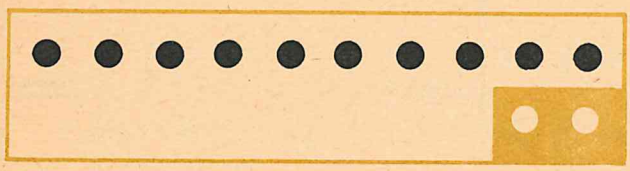
$6 + 5 = \square$ $\quad 5 + 6 = \square$

$11 - 5 = \square$ $\quad 11 - 6 = \square$



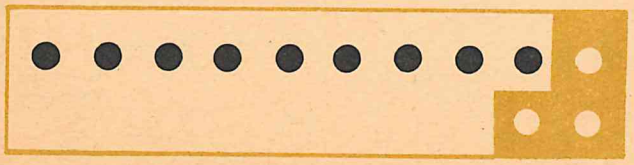
$11 + 1 = \square$ $\quad 1 + 11 = \square$

$12 - 1 = \square$ $\quad 12 - 11 = \square$



$10 + 2 = \square$ $\quad 2 + 10 = \square$

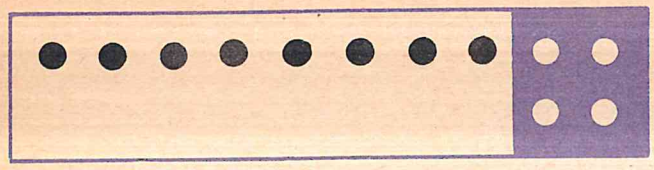
$12 - 2 = \square$ $\quad 12 - 10 = \square$



$9 + 3 = \square$ $\quad 3 + 9 = \square$

$12 - 3 = \square$ $\quad 12 - 9 = \square$

Write in the missing numbers.



$8 + 4 = \square$ $\quad 4 + 8 = \square$

$12 - 4 = \square$ $\quad 12 - 8 = \square$

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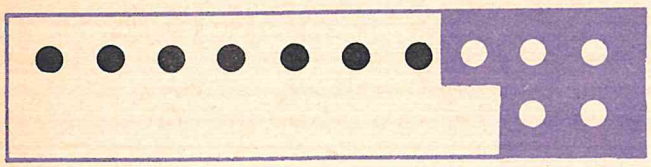

$7 + 5 = \square$ $\quad 5 + 7 = \square$

$12 - 5 = \square$ $\quad 12 - 7 = \square$

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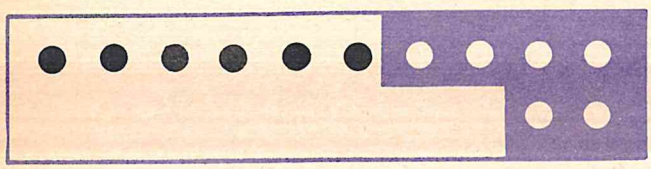

$6 + 6 = \square$ $\quad 6 + \square = 12$

$12 - 6 = \square$ $\quad \square - 6 = 6$

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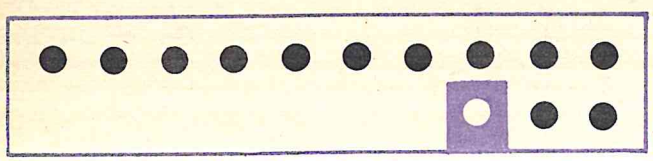

$12 + 1 = \square$ $\quad 1 + 12 = \square$

$13 - 1 = \square$ $\quad 13 - 12 = \square$

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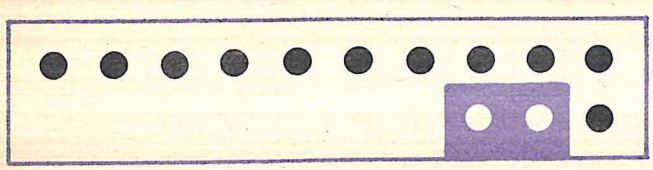

$11 + 2 = \square$ $\quad 2 + 11 = \square$

$13 - 2 = \square$ $\quad 13 - 11 = \square$

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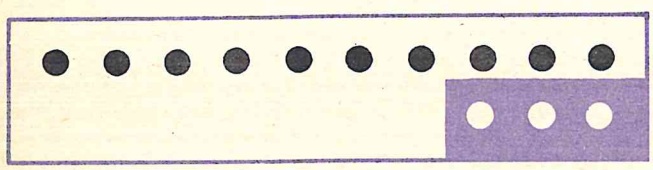

$10 + 3 = \square$ $\quad 3 + 10 = \square$

$13 - 3 = \square$ $\quad 13 - 10 = \square$

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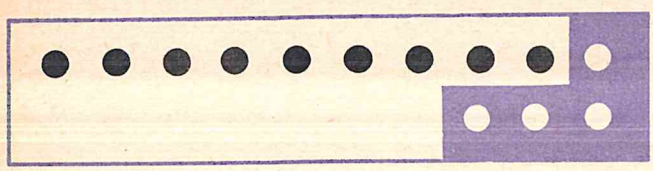

$9 + 4 = \square$ $\quad 4 + 9 = \square$

$13 - 4 = \square$ $\quad 13 - 9 = \square$

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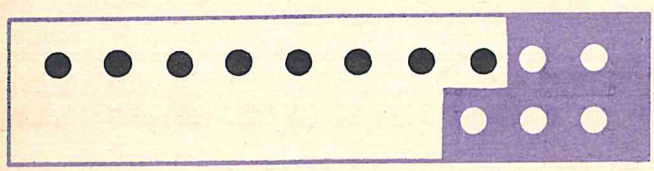

$8 + 5 = \square$ $\quad 5 + 8 = \square$

$13 - 5 = \square$ $\quad 13 - 8 = \square$

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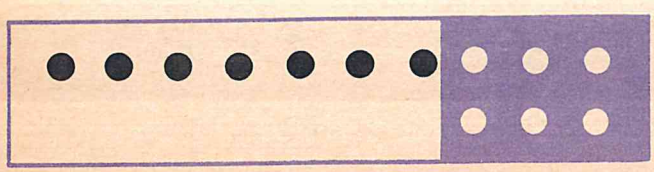
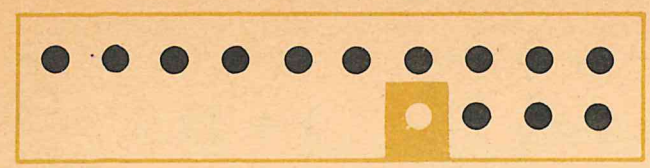


$7 + 6 = \square$ $\quad 6 + 7 = \square$

$13 - 6 = \square$ $\quad 13 - 7 = \square$

Write in the missing numbers.



$13 + 1 = \square$ $\quad 1 + 13 = \square$

$14 - 1 = \square$ $\quad 14 - 13 = \square$

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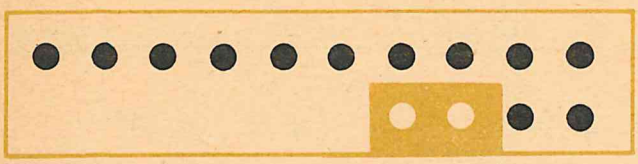

$12 + 2 = \square$ $\quad 2 + 12 = \square$

$14 - 2 = \square$ $\quad 14 - 12 = \square$

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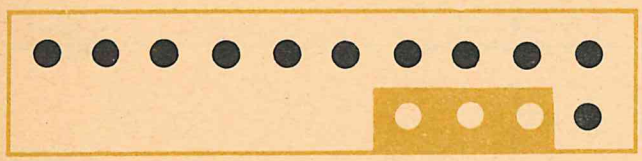

$11 + 3 = \square$ $\quad 3 + 11 = \square$

$14 - 3 = \square$ $\quad 14 - 11 = \square$

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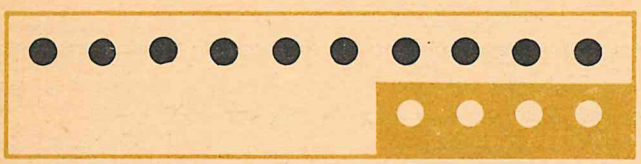

$10 + 4 = \square$ $\quad 4 + 10 = \square$

$14 - 4 = \square$ $\quad 14 - 10 = \square$

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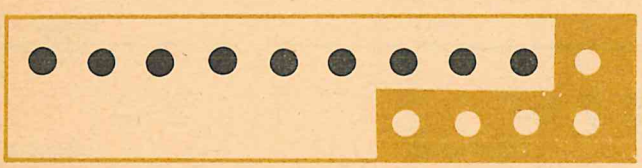

$9 + 5 = \square$ $\quad 5 + 9 = \square$

$14 - 5 = \square$ $\quad 14 - 9 = \square$

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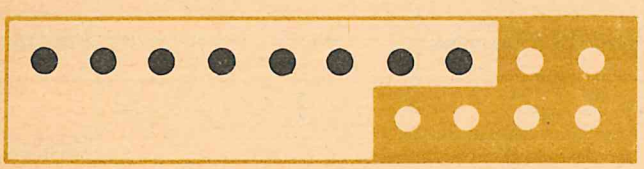

$8 + 6 = \square$ $\quad 6 + 8 = \square$

$14 - 6 = \square$ $\quad 14 - 8 = \square$

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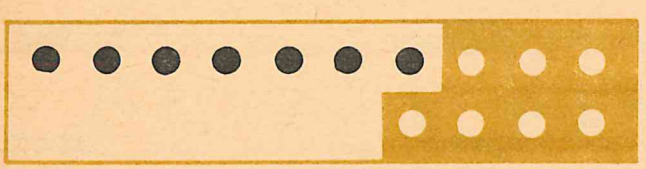

$7 + 7 = \square$ $\quad 7 + \square = 14$

$14 - 7 = \square$ $\quad \square - 7 = 7$

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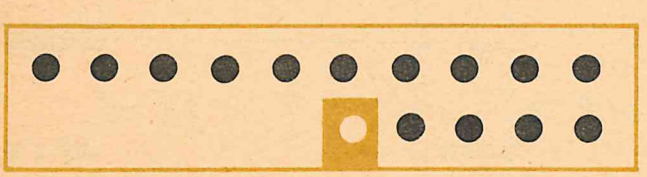

$14 + 1 = \square$ $\quad 1 + 14 = \square$

$15 - 1 = \square$ $\quad 15 - 14 = \square$

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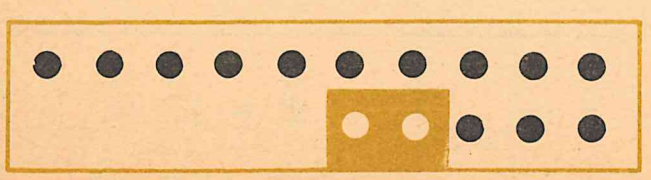
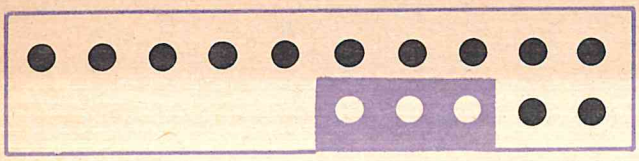


$13 + 2 = \square$ $\quad 2 + 13 = \square$

$15 - 2 = \square$ $\quad 15 - 13 = \square$

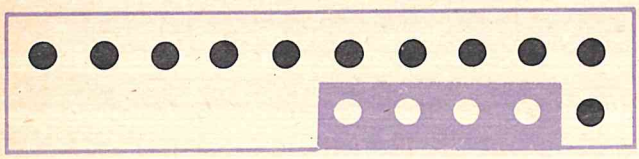
---

Write in the missing numbers.



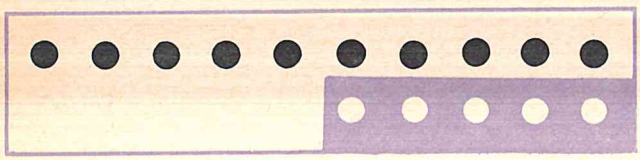
$12 + 3 = \square$ $\quad$ $3 + 12 = \square$

$15 - 3 = \square$ $\quad$ $15 - 12 = \square$



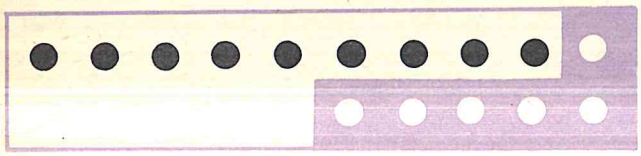
$11 + 4 = \square$ $\quad$ $4 + 11 = \square$

$15 - 4 = \square$ $\quad$ $15 - 11 = \square$



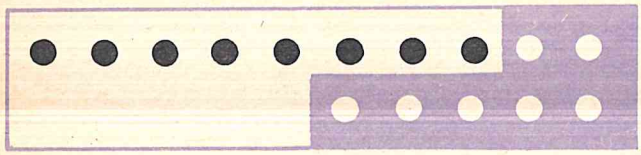
$10 + 5 = \square$ $\quad$ $5 + 10 = \square$

$15 - 5 = \square$ $\quad$ $15 - 10 = \square$



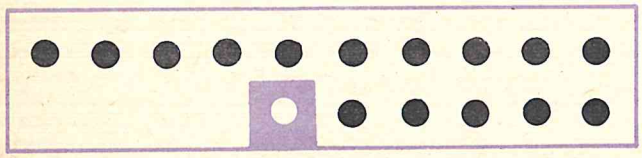
$9 + 6 = \square$ $\quad$ $6 + 9 = \square$

$15 - 6 = \square$ $\quad$ $15 - 9 = \square$



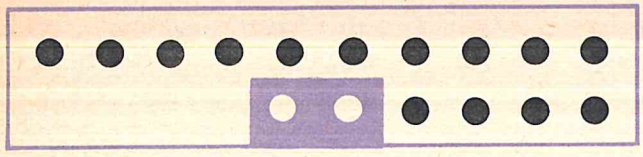
$8 + 7 = \square$ $\quad$ $7 + 8 = \square$

$15 - 7 = \square$ $\quad$ $15 - 8 = \square$



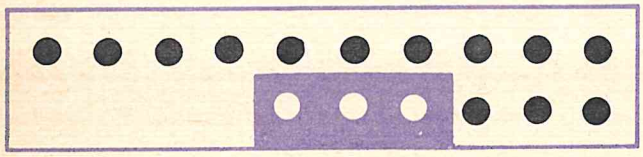
$15 + 1 = \square$ $\quad$ $1 + 15 = \square$

$16 - 1 = \square$ $\quad$ $16 - 15 = \square$



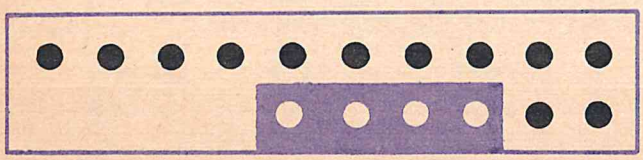
$14 + 2 = \square$ $\quad$ $2 + 14 = \square$

$16 - 2 = \square$ $\quad$ $16 - 14 = \square$



$13 + 3 = \square$ $\quad$ $3 + 13 = \square$

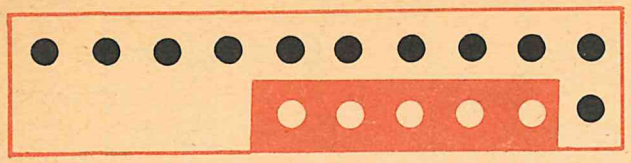
$16 - 3 = \square$ $\quad$ $16 - 13 = \square$



$12 + 4 = \square$ $\quad$ $4 + 12 = \square$

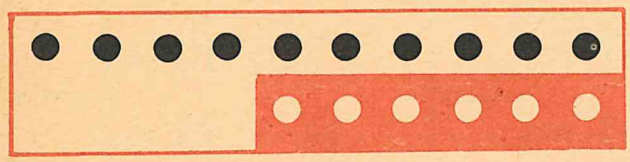
$16 - 4 = \square$ $\quad$ $16 - 12 = \square$

Write in the missing numbers.



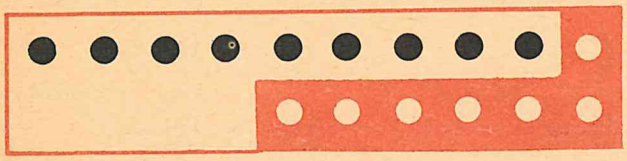
$11 + 5 = \square$ $\quad$ $5 + 11 = \square$

$16 - 5 = \square$ $\quad$ $16 - 11 = \square$



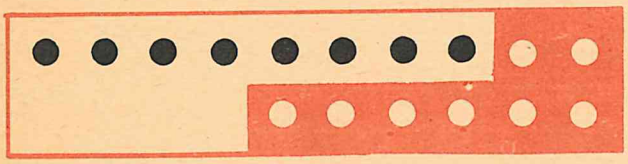
$10 + 6 = \square$ $\quad$ $6 + 10 = \square$

$16 - 6 = \square$ $\quad$ $16 - 10 = \square$



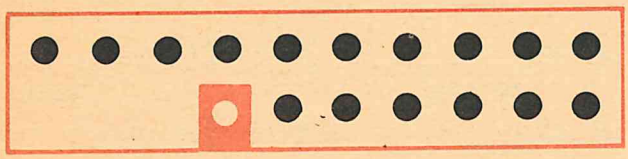
$9 + 7 = \square$ $\quad$ $7 + 9 = \square$

$16 - 7 = \square$ $\quad$ $16 - 9 = \square$



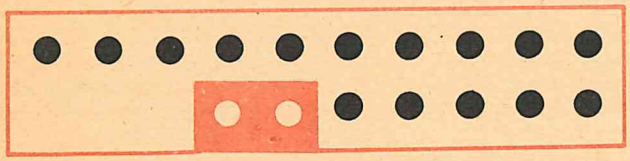
$8 + 8 = \square$ $\quad$ $8 + \square = 16$

$16 - 8 = \square$ $\quad$ $\square - 8 = 8$



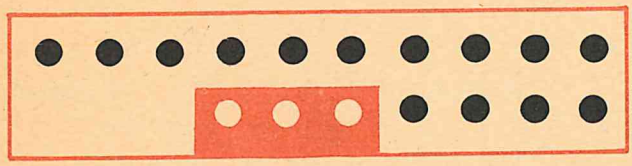
$16 + 1 = \square$ $\quad$ $1 + 16 = \square$

$17 - 1 = \square$ $\quad$ $17 - 16 = \square$



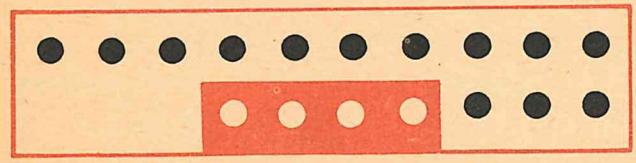
$15 + 2 = \square$ $\quad$ $2 + 15 = \square$

$17 - 2 = \square$ $\quad$ $17 - 15 = \square$



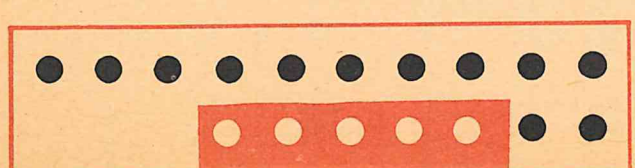
$14 + 3 = \square$ $\quad$ $3 + 14 = \square$

$17 - 3 = \square$ $\quad$ $17 - 14 = \square$



$13 + 4 = \square$ $\quad$ $4 + 13 = \square$

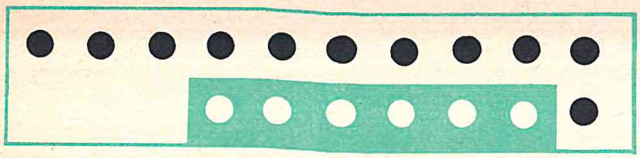
$17 - 4 = \square$ $\quad$ $17 - 13 = \square$



$12 + 5 = \square$ $\quad$ $5 + 12 = \square$

$17 - 5 = \square$ $\quad$ $17 - 12 = \square$

Write in the missing numbers.



$11 + 6 =$ ☐ $\quad 6 + 11 =$ ☐

$17 - 6 =$ ☐ $\quad 17 - 11 =$ ☐

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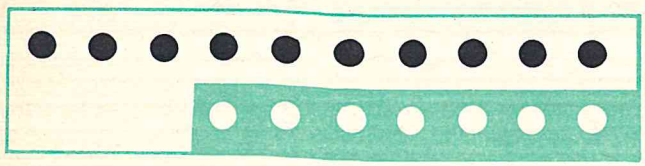

$10 + 7 =$ ☐ $\quad 7 + 10 =$ ☐

$17 - 7 =$ ☐ $\quad 17 - 10 =$ ☐

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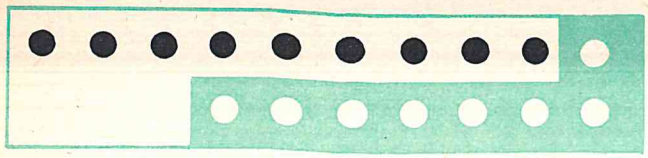

$9 + 8 =$ ☐ $\quad 8 + 9 =$ ☐

$17 - 8 =$ ☐ $\quad 17 - 9 =$ ☐

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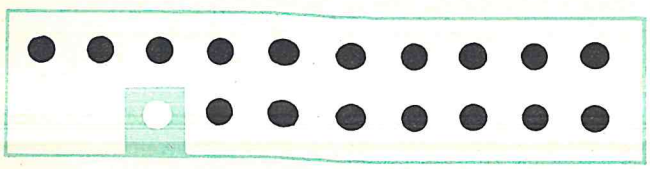

$17 + 1 =$ ☐ $\quad 1 + 17 =$ ☐

$18 - 1 =$ ☐ $\quad 18 - 17 =$ ☐

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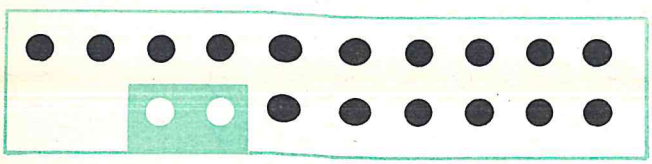

$16 + 2 =$ ☐ $\quad 2 + 16 =$ ☐

$18 - 2 =$ ☐ $\quad 18 - 16 =$ ☐

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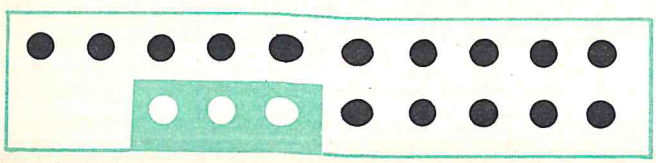
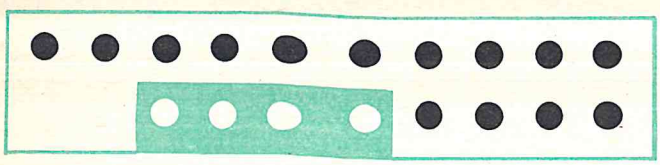


$15 + 3 =$ ☐ $\quad 3 + 15 =$ ☐

$18 - 3 =$ ☐ $\quad 18 - 15 =$ ☐

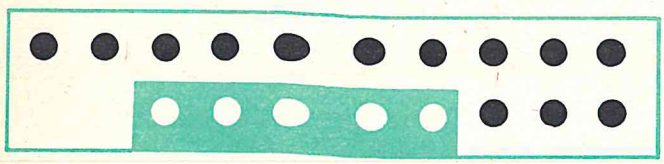
---



$14 + 4 =$ ☐ $\quad 4 + 14 =$ ☐

$18 - 4 =$ ☐ $\quad 18 - 14 =$ ☐

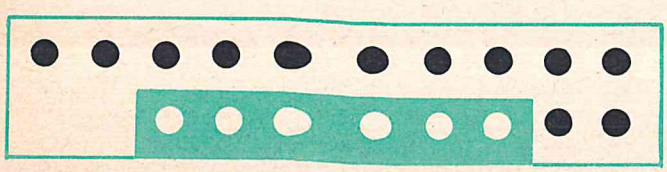
---



$13 + 5 =$ ☐ $\quad 5 + 13 =$ ☐

$18 - 5 =$ ☐ $\quad 18 - 13 =$ ☐

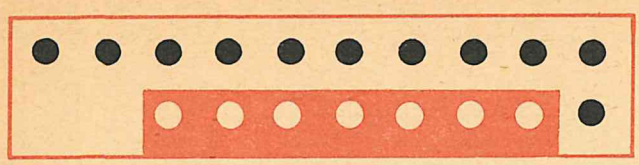
---



$12 + 6 =$ ☐ $\quad 6 + 12 =$ ☐

$18 - 6 =$ ☐ $\quad 18 - 12 =$ ☐

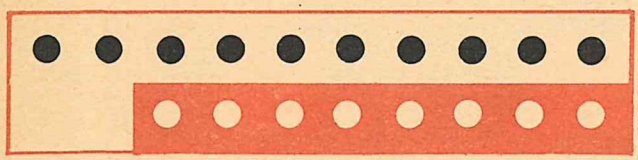
Write in the missing numbers.



$11 + 7 =$ ☐ $\quad 7 + 11 =$ ☐

$18 - 7 =$ ☐ $\quad 18 - 11 =$ ☐

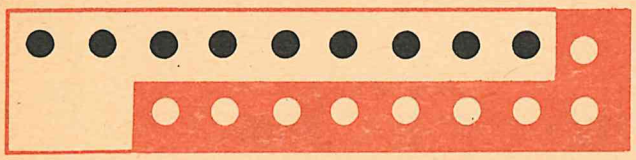
---



$10 + 8 =$ ☐ $\quad 8 + 10 =$ ☐

$18 - 8 =$ ☐ $\quad 18 - 10 =$ ☐

---



$9 + 9 =$ ☐ $\quad 9 +$ ☐ $= 18$

$18 - 9 =$ ☐ $\quad$ ☐ $+ 9 = 9$

| | | |
|---|---|---|
| $11 - 0 =$ ☐ | $12 - 5 =$ ☐ | $16 - 4 =$ ☐ |
| $13 - 5 =$ ☐ | $15 - 1 =$ ☐ | $17 - 3 =$ ☐ |
| $14 - 6 =$ ☐ | $11 - 2 =$ ☐ | $12 - 3 =$ ☐ |
| $12 - 4 =$ ☐ | $13 - 4 =$ ☐ | $14 - 5 =$ ☐ |
| $16 - 7 =$ ☐ | $15 - 0 =$ ☐ | $11 - 3 =$ ☐ |
| $15 - 6 =$ ☐ | $12 - 5 =$ ☐ | $14 - 6 =$ ☐ |
| $11 - 4 =$ ☐ | $13 - 8 =$ ☐ | $13 - 6 =$ ☐ |
| $15 - 7 =$ ☐ | $16 - 8 =$ ☐ | $11 - 7 =$ ☐ |
| $12 - 6 =$ ☐ | $14 - 7 =$ ☐ | $15 - 2 =$ ☐ |
| $17 - 9 =$ ☐ | $13 - 7 =$ ☐ | $17 - 8 =$ ☐ |

# Counting by Fours

Counting by fours is like adding four at a time.

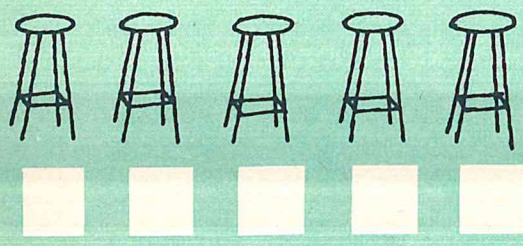
Count the legs of these dogs by counting by fours:

_____ legs _____ legs and _____ legs = _____ legs.

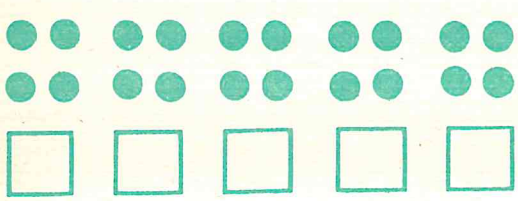
_____ legs and _____ legs = _____ legs.

_____ legs and _____ legs = _____ legs.

_____ legs and _____ legs = _____ legs.



Count the legs of these stools by fours. Write the numbers in the boxes as you count.



Count these marbles by fours. Write the numbers in the boxes as you count.

Count by fours up to 20: _____ _____ _____ _____ _____

Count backwards by fours from 20: _____ _____ _____ _____ _____

# Counting by Fives

Here are some sets of stars. The sets are numbered from 1 to 10. Each set has five more stars than the one before it. Write down the number of stars in each set.

1 ☐ stars

2 ☐ stars

3 ☐ stars

4 ☐ stars

5 ☐ stars

6 ☐ stars

7 ☐ stars

8 ☐ stars

9 ☐ stars

10 ☐ stars

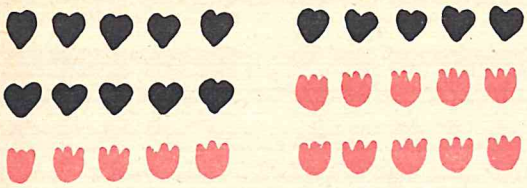
Now continue counting by fives until you reach 100:

| 55 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|

# Half of Tens

Half of ten is ☐

---

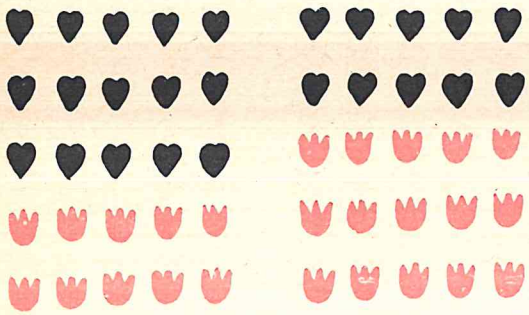


30 = 20 + 10

Half of 30 is half of 20 + half of 10.

Half of 30 is ☐ + ☐ = ☐

---

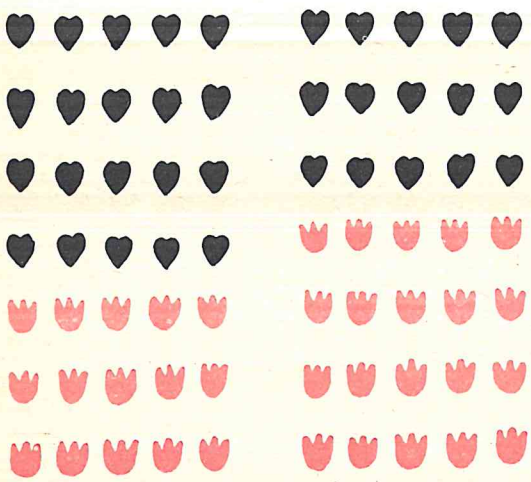


50 = 40 + 10

Half of 50 is half of 40 + half of 10.

Half of 50 is ☐ + ☐ = ☐

---

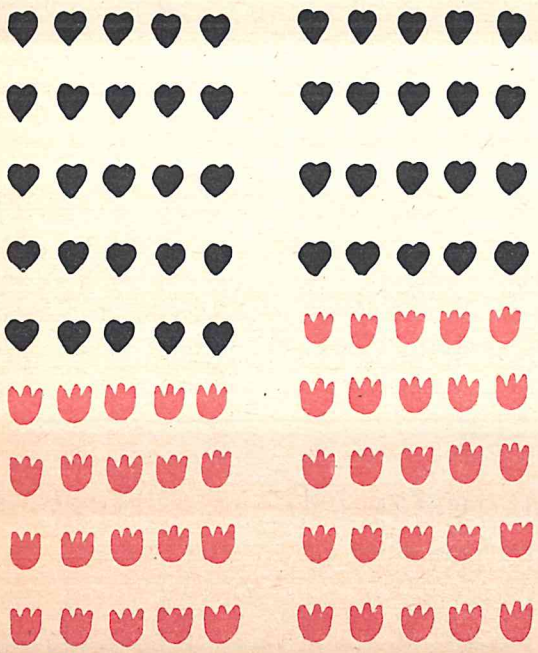


70 = 60 + 10

Half of 70 is half of 60 + half of 10.

Half of 70 is ☐ + ☐ = ☐

---



90 = 80 + 10

Half of 90 is half of 80 + half of 10.

Half of 90 is ☐ + ☐ = ☐

# Counting Money

The **value** of a coin is the number of cents in the coin.
To find the value of dimes, nickels, and pennies,

count ten cents for each dime, = 10¢

count five cents for each nickel, = 5¢

and count one cent for each penny. = 1¢

**Example:** To find the value of the coins below, start at the left and count by tens for the dimes, by fives for the nickels, and by ones for the pennies. The numbers you say as you count are written under the coins.

10 20 25 26 27 28

Value: 28¢

---

Count by tens, fives, and ones to find the value of each set of coins:

Value: ☐ ¢

---

Value: ☐ ¢

---

Value: ☐ ¢

---

Value: ☐ ¢

# Quarters

This coin is a quarter of a dollar.
We call it a **quarter.**
It is worth 25 cents.

Count by tens to find the value of each set of dimes:

2 dimes are worth ☐ ¢.

3 dimes are worth ☐ ¢

---

Circle the right answers:

2 dimes are worth { less / more } than a quarter.

3 dimes are worth { less / more } than a quarter.

---

Count the value by tens and fives.

Value: ☐ ¢

☐ dimes and one nickel are worth the same as a quarter.

---

Count the value by fives:

Value: ☐ ¢

Value: ☐ ¢

Value: ☐ ¢

☐ nickels are worth the same as a quarter.

# Counting Money

To find the value of this set of coins, start at the left.

The numbers you say as you count are written under the coins.

Count the quarter as 25 cents.

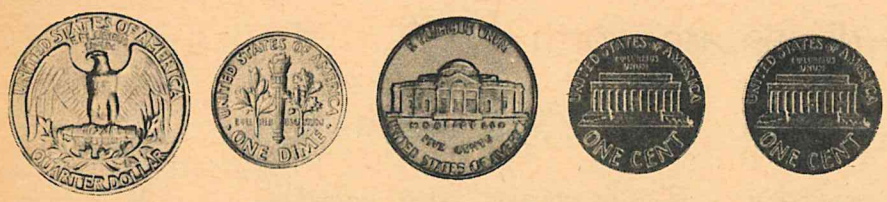
25 35 45 50 51 52

Value: 52¢

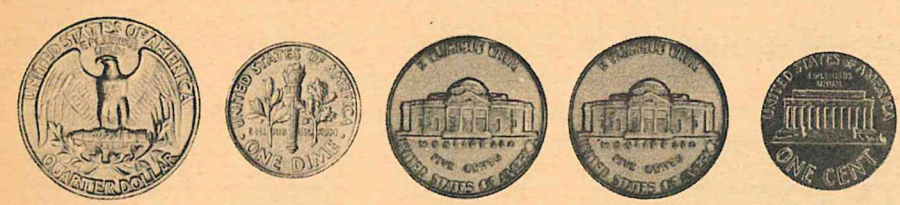
---

Find the value of each set of coins. Start counting at the left.

Write the numbers under the coins as you count.



Value: ☐ ¢

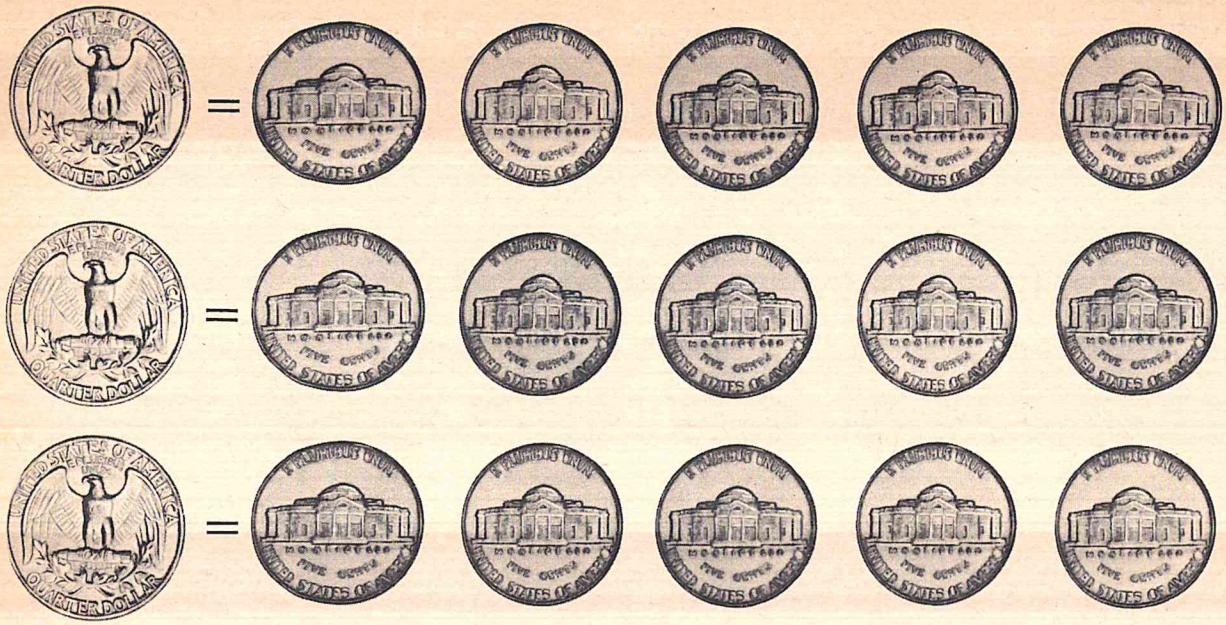


Value: ☐ ¢

Value: ☐ ¢

Value: ☐ ¢

# Two or Three Quarters



Counting five cents for each nickel,

find the value of 2 quarters: 2 quarters are worth ☐ ¢;

find the value of 3 quarters: 3 quarters are worth ☐ ¢.

---

Find the value of each set of coins:

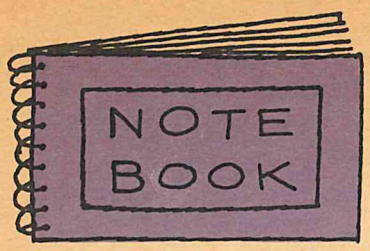
Value: ☐ ¢

Value: ☐ ¢

Value: ☐ ¢

Value: ☐ ¢

# Change for a Quarter




Price 12¢

This notebook was paid for with a quarter. The storekeeper made change by putting down these coins from left to right.

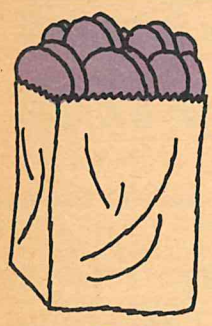
He counted out loud by ones and fives from 13 to 25.

13 14 15 20 25

Now count by fives and ones from right to left, to find the value of the change.

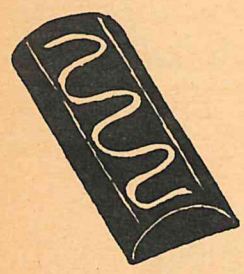
The change is worth ☐ ¢.

Each of the things below was paid for with a quarter.
Make change by coloring the coins you need.
Use red for pennies, yellow for dimes, and green for nickels.



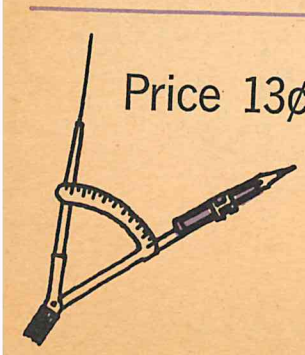
Price 17¢

The change is worth ☐ ¢.



Price 6¢

The change is worth ☐ ¢.



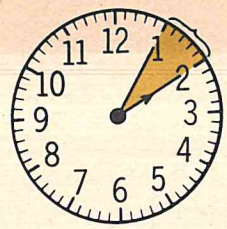
Price 13¢

The change is worth ☐ ¢.

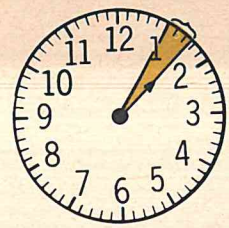
# Half Hours

The short hand of a clock is the hour hand.

It moves this much in one hour.

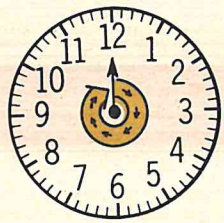


It moves this much in half an hour.



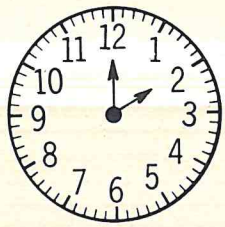
The long hand of a clock is the minute hand.

It moves around all the way in an hour.



It moves this much in half an hour.

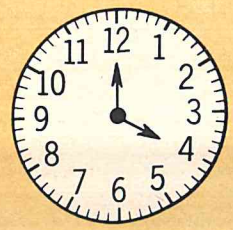
This is how the clock looks at 2 o'clock.



This is how the clock looks at half an hour after 2 o'clock.

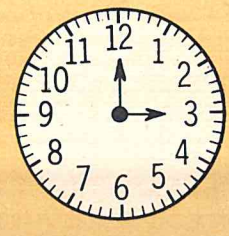
This time is called half past 2 o'clock.

What time is shown by each clock?

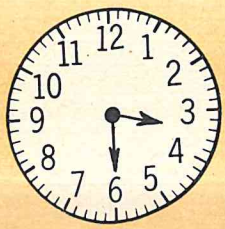


o'clock

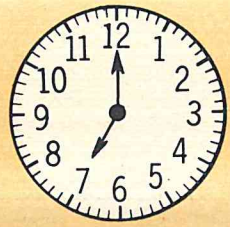
o'clock



o'clock



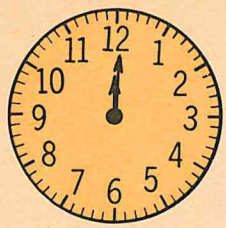
o'clock



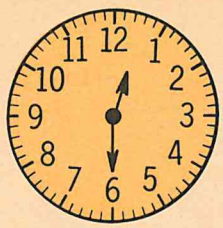
o'clock

o'clock

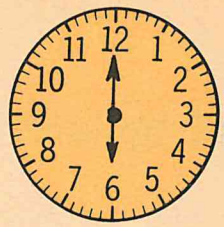
What time is shown by each clock?



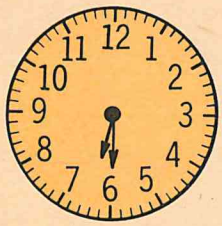
o'clock



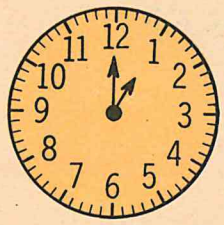
o'clock



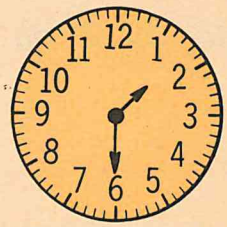
o'clock



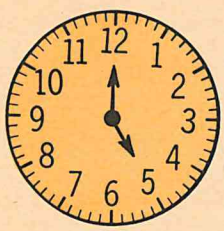
o'clock



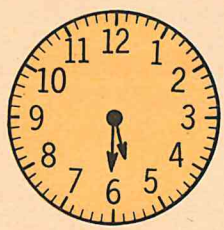
o'clock



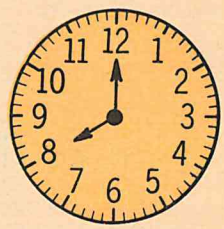
o'clock



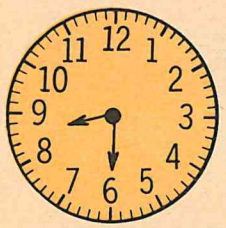
o'clock



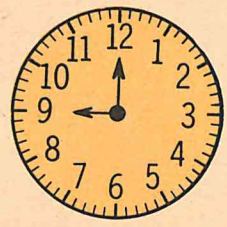
o'clock



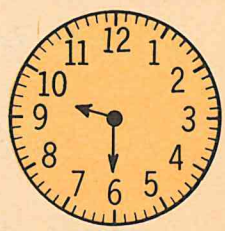
o'clock



o'clock



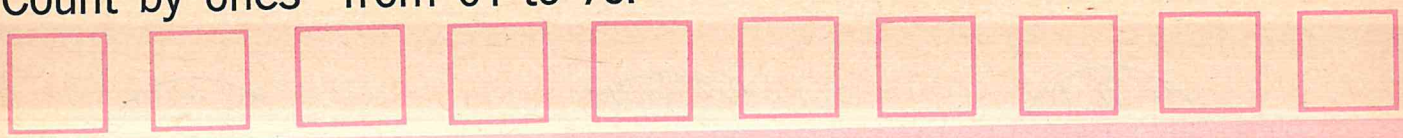
o'clock



o'clock

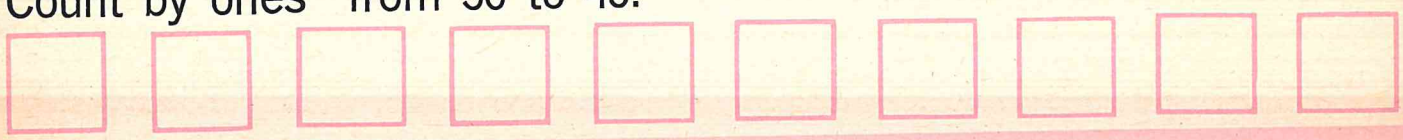
# Counting

Count by ones from 64 to 73.

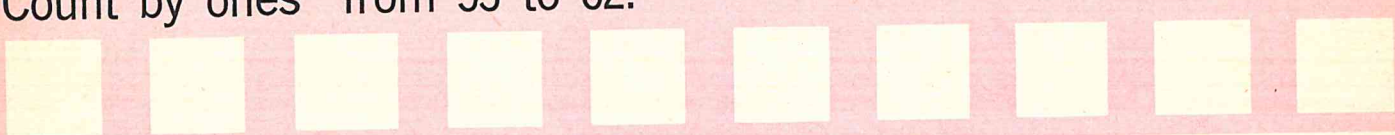


Count by ones from 48 to 57.

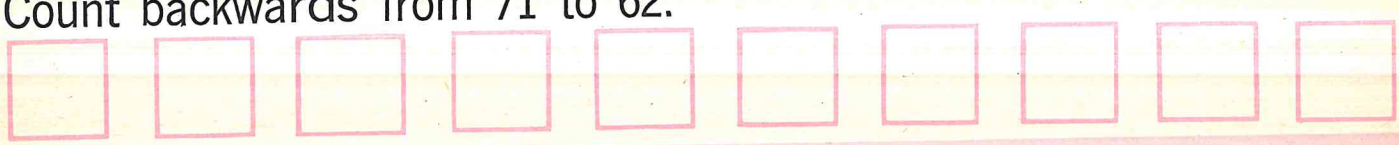
Count by ones from 36 to 45.



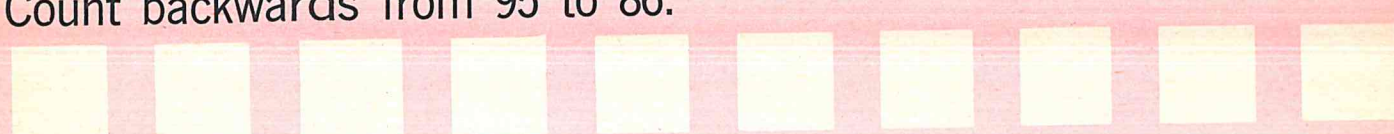
Count by ones from 53 to 62.



Count backwards from 71 to 62.



Count backwards from 95 to 86.



| | |
|---|---|
| 1 more than 45 is | 4 more than 81 is |
| 1 less than 73 is | 4 less than 69 is |
| 2 more than 62 is | 5 more than 32 is |
| 2 less than 49 is | 5 less than 45 is |
| 3 more than 41 is | 6 more than 41 is |
| 3 less than 78 is | 6 less than 56 is |
| 5 more than 70 is | 5 more than 30 is |
| 5 more than 90 is | 5 more than 80 is |

# Completing the Next Ten

72 and how many are 80?

To answer this question, think: 72 = 70 and 2  80 = 70 and 10

Starting with 2, we need 8 more to complete 10.

So 72 and 8 are 80.

| | | |
|---|---|---|
| 53 and ☐ are 60. | 61 and ☐ are 70. | 29 and ☐ are 30. |
| 44 and ☐ are 50. | 23 and ☐ are 30. | 36 and ☐ are 40. |
| 16 and ☐ are 20. | 82 and ☐ are 90. | 45 and ☐ are 50. |
| 35 and ☐ are 40. | 51 and ☐ are 60. | 67 and ☐ are 70. |
| 27 and ☐ are 30. | 48 and ☐ are 50. | 72 and ☐ are 80. |

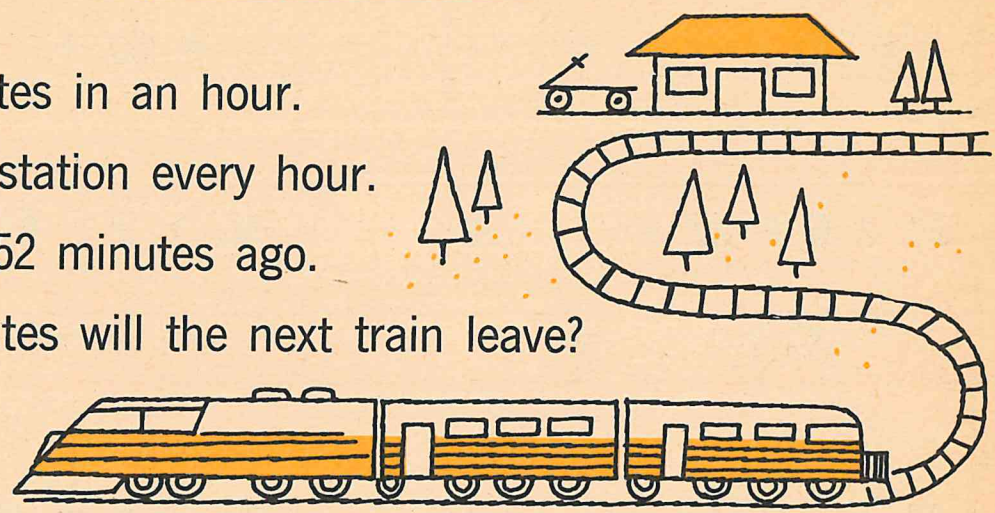
There are 60 minutes in an hour.

A train leaves the station every hour.

The last train left 52 minutes ago.

In how many minutes will the next train leave?

Answer: ☐



There are 30 days in the month of April.

After 24 days in April have passed,

how many days of the month are left?

Answer: ☐

# Adding by Completing the Next Ten

To add 87 and 5, first take enough from the five to complete the next ten:

$87 + 5 = 87 + 3 + 2$

$= 90 + 2 = 92.$

To add 64 and 9, first take enough from the nine to complete the next ten:

$64 + 9 = 64 + 6 + 3$

$= 70 + 3 = 73.$

Add by completing the next ten:

$45 + 8 = 45 + \square + \square$

$= 50 + \square = \square$

$67 + 4 = 67 + \square + \square$

$= 70 + \square = \square$

$36 + 9 = 36 + \square + \square$

$= 40 + \square = \square$

$58 + 6 = 58 + \square + \square$

$= 60 + \square = \square$

$17 + 6 = 17 + \square + \square$

$= 20 + \square = \square$

$63 + 9 = 63 + \square + \square$

$= 70 + \square = \square$

$44 + 7 = 44 + \square + \square$

$= 50 + \square = \square$

$38 + 5 = 38 + \square + \square$

$= 40 + \square = \square$

$29 + 4 = 29 + \square + \square$

$= 30 + \square = \square$

$45 + 6 = 45 + \square + \square$

$= 50 + \square = \square$

Add by completing the next ten:

35 + 7 = 35 + ☐ + ☐

= ☐ + ☐ = ☐

12 + 9 = 12 + ☐ + ☐

= ☐ + ☐ = ☐

23 + 8 = 23 + ☐ + ☐

= ☐ + ☐ = ☐

86 + 6 = 86 + ☐ + ☐

= ☐ + ☐ = ☐

77 + 7 = 77 + ☐ + ☐

= ☐ + ☐ = ☐

68 + 8 = 68 + ☐ + ☐

= ☐ + ☐ = ☐

59 + 9 = 59 + ☐ + ☐

= ☐ + ☐ = ☐

46 + 7 = 46 + ☐ + ☐

= ☐ + ☐ = ☐

49 + 2 = 49 + ☐ + ☐

= ☐ + ☐ = ☐

59 + 7 = 59 + ☐ + ☐

= ☐ + ☐ = ☐

38 + 4 = 38 + ☐ + ☐

= ☐ + ☐ = ☐

47 + 5 = 47 + ☐ + ☐

= ☐ + ☐ = ☐

78 + 7 = 78 + ☐ + ☐

= ☐ + ☐ = ☐

59 + 3 = 59 + ☐ + ☐

= ☐ + ☐ = ☐

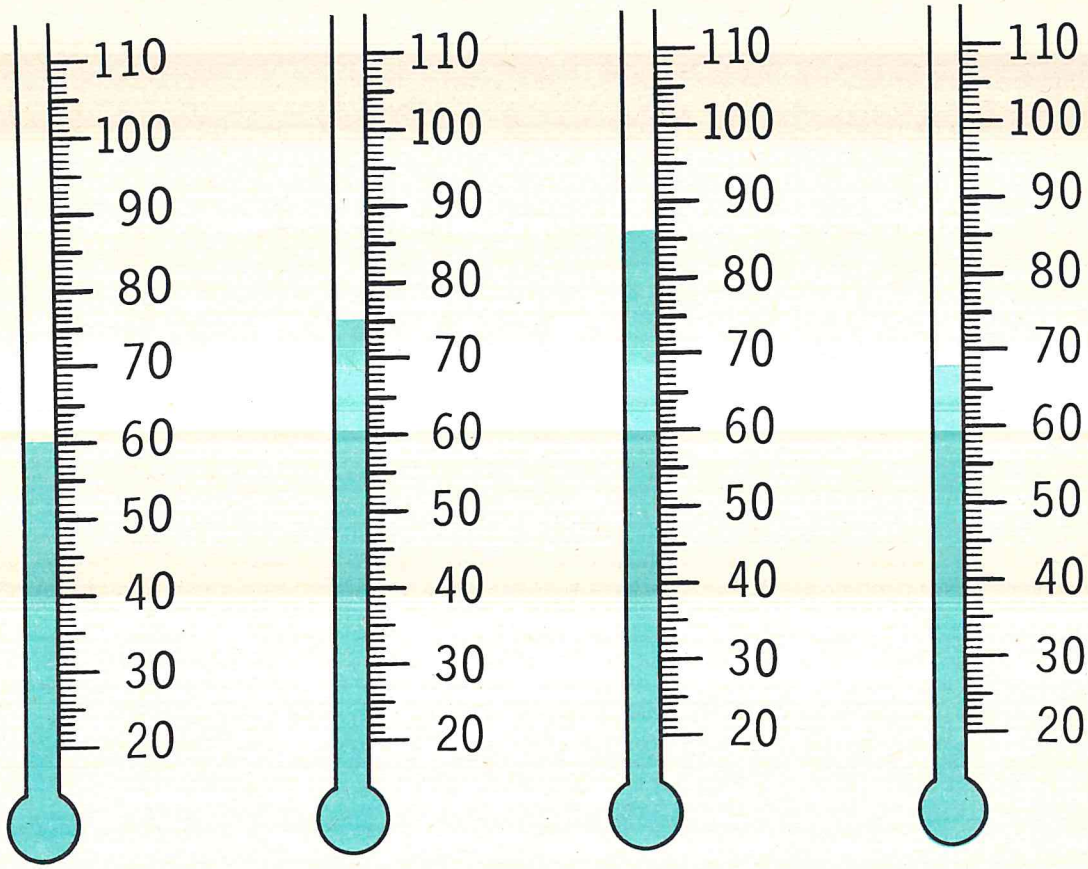
# Thermometers

The thermometer tells us what the temperature is.

70 degrees is a comfortable room temperature.

Water freezes into ice when the temperature is 32 degrees.

What is the temperature shown by each of these thermometers?




☐ degrees ☐ degrees ☐ degrees ☐ degrees

If the temperature is 68 degrees, and it rises 4 degrees, what is the new temperature?

Answer: ☐ degrees

If the temperature is 87 degrees, and it falls 5 degrees, what is the new temperature?

Answer: ☐ degrees

# Days of the Week

The days of the week come in this order:

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|

After each of the days listed below,
write the number that shows what day of the week it is.

Monday ☐ Wednesday ☐ Tuesday ☐

Sunday ☐ Saturday ☐ Thursday ☐

Circle each correct answer:

The day after Tuesday is Monday, Wednesday, Thursday.

The day after Thursday is Friday, Wednesday, Saturday.

The day before Wednesday is Monday, Tuesday, Friday.

The day before Sunday is Monday, Thursday, Saturday.

---

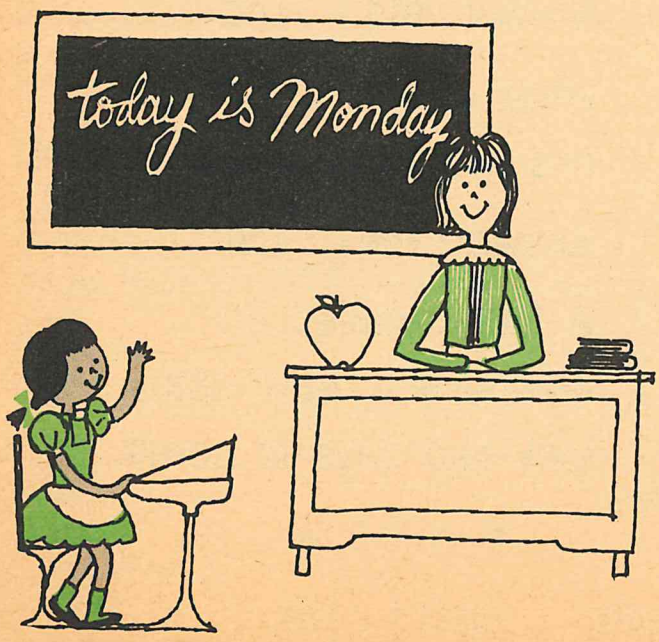
On Friday, Fred met his friend Tom.

Tom said to Fred, "Come to my house tomorrow."

Tom meant that Fred should come on

Friday, Saturday, Sunday.

---




This picture shows Mary
in her class in school.
Yesterday she visited her uncle
in the country.
She visited her uncle on
Friday, Saturday, Sunday.

# Calendars

There are twelve months in a year. Each year begins with January. The other months follow in this order: February, March, April, May, June, July, August, September, October, November, December. December is followed by January of the next year.

Each page of a calendar shows the days of a month. The days are numbered, beginning with 1. A separate line is used for each week. The calendar for April, 1962, is shown below.

| 1962 | | | APRIL | | | 1962 |
|---|---|---|---|---|---|---|
| S | M | T | W | T | F | S |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | | | | | |

Complete each of these sentences about April, 1962:

There are ☐ days in April.

There are ☐ full weeks in the month.

The first day of the month was a Sunday.
These days were also Sundays:

☐ th ☐ th ☐ nd ☐ th

There were ☐ Fridays in the month.

There were ☐ Saturdays in the month.

What day of the month was the first Monday?

Answer: the ☐ nd

What day of the month was the second Wednesday?

Answer: the ☐ th

A letter mailed on Wednesday, April 18th, took two days to come.

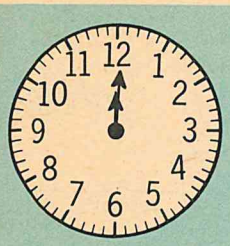
It came on ☐

April ☐ th.

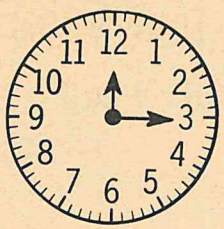
# Quarter Hours

One fourth of an hour is called a **quarter of an hour.**

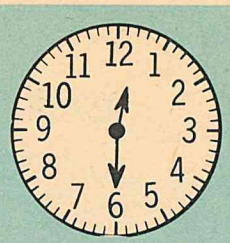
The pictures below show changes on a clock face for almost four hours. Fill in the blank to tell what time it is in each picture.



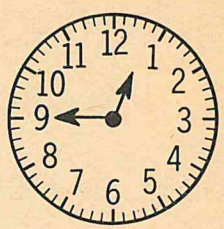
o'clock



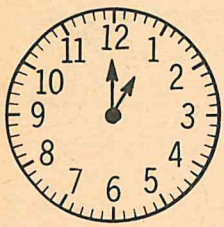
a quarter of an hour past o'clock



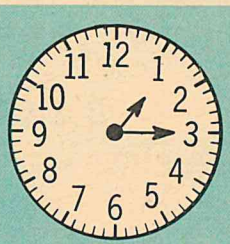
half past o'clock



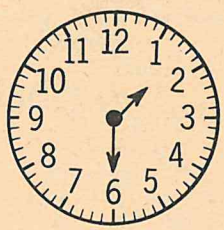
a quarter of an hour before o'clock



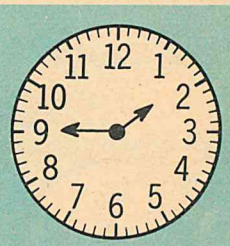
o'clock



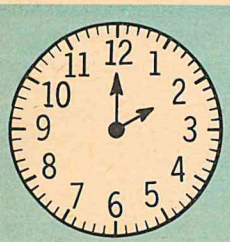
a quarter of an hour 1 o'clock



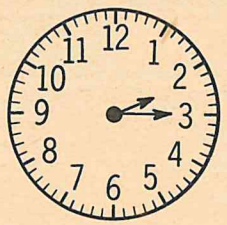
past 1 o'clock



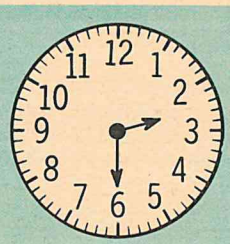
a quarter of an hour 2 o'clock



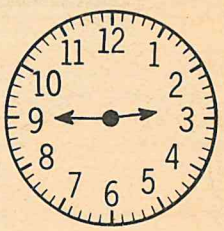
o'clock



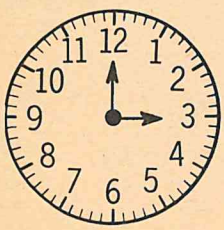
a quarter of an hour o'clock



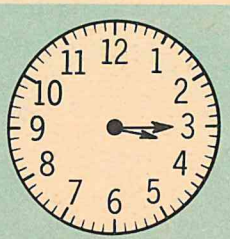
past 2 o'clock



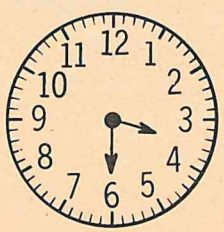
a quarter of an hour o'clock



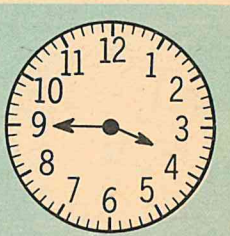
o'clock



a quarter of an hour o'clock

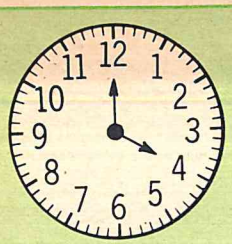


past o'clock

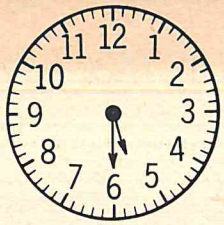


a quarter of an hour o'clock

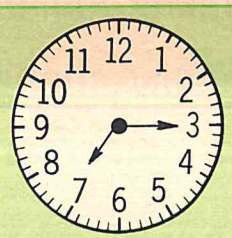
Fill in the blanks.



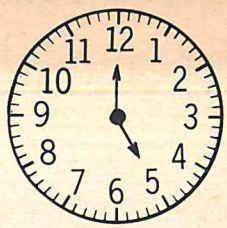
_____ o'clock



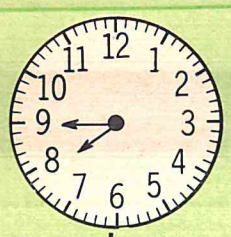
_____ past
_____ o'clock



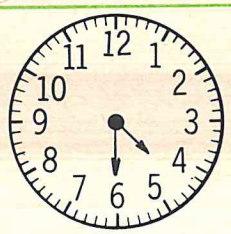
a quarter
of an hour
_____ o'clock



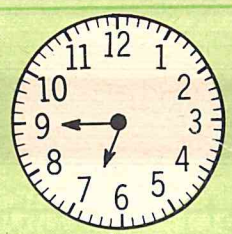
_____ o'clock



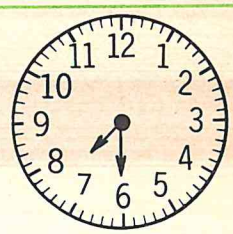
a quarter
of an hour
_____ o'clock



_____ past
_____ o'clock

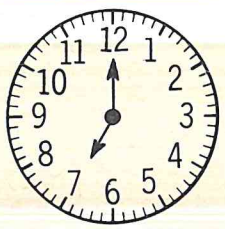


a quarter
of an hour
_____ o'clock

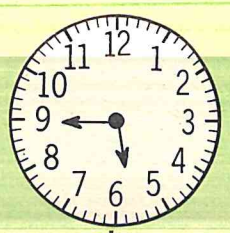


_____ past
_____ o'clock

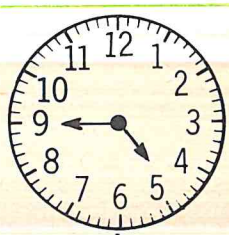
_____ o'clock



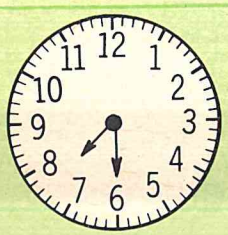
_____ o'clock



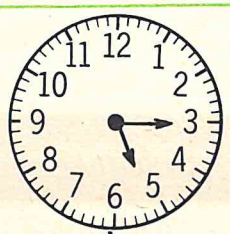
a quarter
of an hour
_____ o'clock



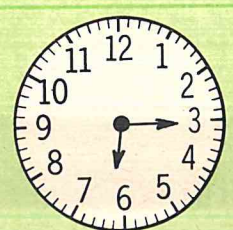
a quarter
of an hour
_____ o'clock



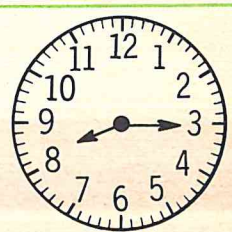
_____ past
_____ o'clock



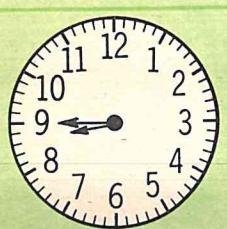
a quarter
of an hour
_____ o'clock



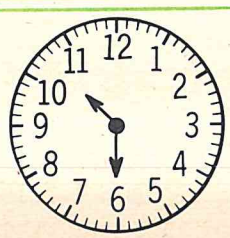
a quarter
of an hour
_____ o'clock



a quarter
of an hour
_____ o'clock



a quarter
of an hour
_____ o'clock



_____ past
_____ o'clock

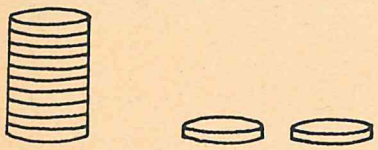
_____ past
_____ o'clock

_____ o'clock

# Place Value

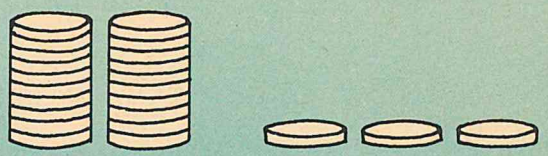
When you count pennies, you pile them up in groups of ten.

12 pennies make
1 pile of ten pennies
with 2 pennies left over.
When you write 12,
the 1 means **1 pile of ten;**
the 2 means **2 left over.**



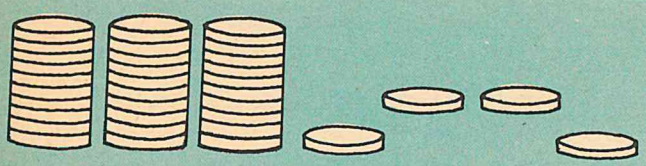
1 ten and 2
or 12

23 pennies make
2 piles of ten pennies
with 3 pennies left over.
When we write 23,
the 2 means **2 piles of ten;**
the 3 means **3 left over.**

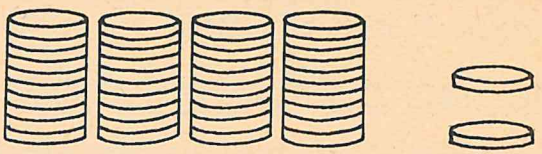


2 tens and 3
or 23

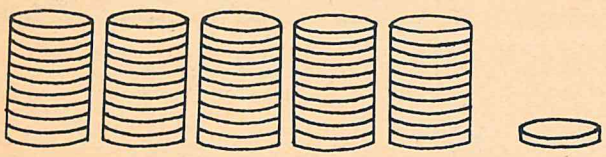
Fill in the missing numbers, to show the number of pennies.



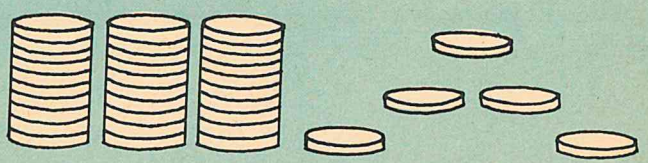
☐ tens and ☐
or ☐



☐ tens and ☐
or ☐



☐ tens and ☐
or ☐



☐ tens and ☐
or ☐

27 means ☐ tens and ☐

43 means ☐ tens and ☐

56 means ☐ tens and ☐

62 means ☐ tens and ☐

95 means ☐ tens and ☐

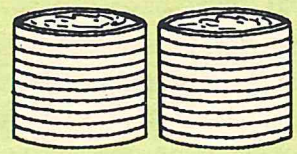
74 means ☐ tens and ☐

10 pennies make 1 pile of ten with no pennies left over.

none

1 ten and 0
or 10

20 pennies make 2 piles of ten with no pennies left over.



none

2 tens and 0
or 20

Complete these sentences:

30 means ☐ tens and ☐

50 means ☐ tens and ☐

70 means ☐ tens and ☐

40 means ☐ tens and ☐

60 means ☐ tens and ☐

80 means ☐ tens and ☐

Below, we use pictures to show what a numeral means.
In the tens column, ten circles in a box show a group of ten.
In the units column, each circle shows one unit.

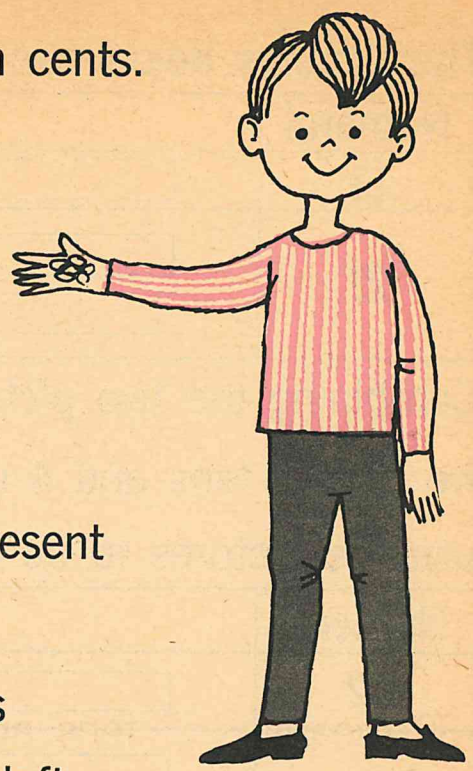
Pictures are drawn for the first two numerals.
You draw the circles and groups of circles to show the rest.

| Numeral | Tens | Units |
|---|---|---|
| 13 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ | ○ ○ ○ |
| 21 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○<br>○ ○ ○ ○ ○ ○ ○ ○ ○ ○ | ○ |
| 30 | | |
| 45 | | |

12 cents means 1 group of ten cents and 2 cents.

A dime can take the place of a group of ten cents.

So 12 cents means 1 dime and 2 cents.



13 cents means ☐ dime and ☐ cents.

25 cents means ☐ dimes and ☐ cents.

46 cents means ☐ dimes and ☐ cents.

72 cents means ☐ dimes and ☐ cents.

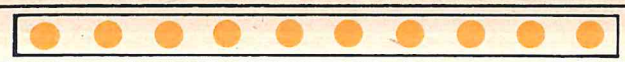
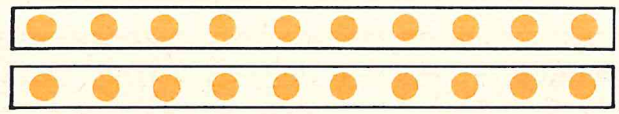
On each line below, there are circles to represent dimes and pennies.

Fill in with pencil enough dimes and pennies to show the number of cents printed at the left.

| Number of Cents | Dimes | Pennies |
|---|---|---|
| Example 23 | ● ● ○ ○ | ● ● ● ○ |
| 14 | ○ ○ ○ ○ | ○ ○ ○ ○ |
| 20 | ○ ○ ○ ○ | ○ ○ ○ ○ |
| 31 | ○ ○ ○ ○ | ○ ○ ○ ○ |
| 42 | ○ ○ ○ ○ | ○ ○ ○ ○ |
| 40 | ○ ○ ○ ○ | ○ ○ ○ ○ |
| 32 | ○ ○ ○ ○ | ○ ○ ○ ○ |

# Adding by Place Value

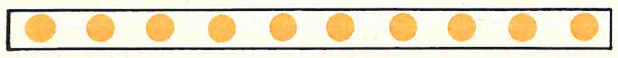
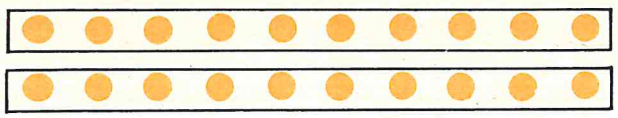
The pictures below can help us add 13 and 21.

| Numeral | Tens | Units |
|---|---|---|
| 13 |  | |
| 21 |  | |

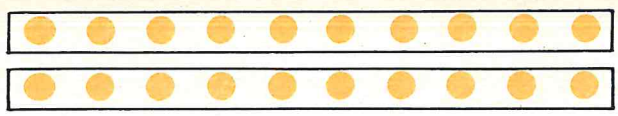
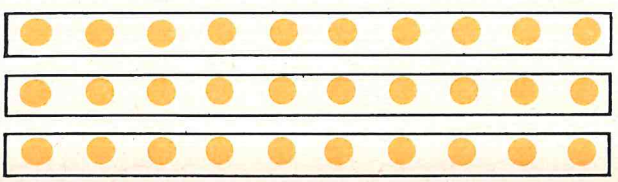
Combining the two pictures into one picture,

we have 3 tens and 4 units. So 13 + 21 = 34.

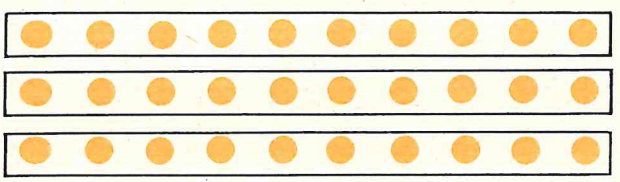
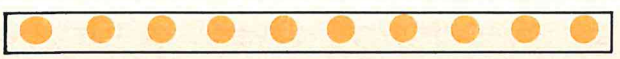
Use the pictures to do the addition exercises below:

| Numeral | Tens | Units |
|---|---|---|
| 12 |  | |
| 23 |  | |

12 + 23 = ☐ tens and ☐ units = ☐

| Numeral | Tens | Units |
|---|---|---|
| 22 |  | |
| 32 |  | |

22 + 32 = ☐ tens and ☐ units = ☐

| Numeral | Tens | Units |
|---|---|---|
| 31 |  | |
| 11 |  | |

31 + 11 = ☐ tens and ☐ units = ☐

Follow the examples to do these problems in addition:

**Example**

32 — 3 tens and 2

12 — 1 ten and 2

4 tens and 4 = 44

**Example**

45 — 4 tens and 5

13 — 1 ten and 3

5 tens and 8 = 58

46 — ☐ tens and ☐

21 — ☐ tens and ☐

☐ tens and ☐ = ☐

15 — ☐ ten and ☐

24 — ☐ tens and ☐

☐ tens and ☐ = ☐

25 — ☐ tens and ☐

42 — ☐ tens and ☐

☐ tens and ☐ = ☐

36 — ☐ tens and ☐

12 — ☐ ten and ☐

☐ tens and ☐ = ☐

11 — ☐ ten and ☐

35 — ☐ tens and ☐

☐ tens and ☐ = ☐

28 — ☐ tens and ☐

11 — ☐ ten and ☐

☐ tens and ☐ = ☐

41 — ☐ tens and ☐

52 — ☐ tens and ☐

☐ tens and ☐ = ☐

51 — ☐ tens and ☐

43 — ☐ tens and ☐

☐ tens and ☐ = ☐

62 — ☐ tens and ☐

14 — ☐ ten and ☐

☐ tens and ☐ = ☐

34 — ☐ tens and ☐

24 — ☐ tens and ☐

☐ tens and ☐ = ☐

33 — ☐ tens and ☐

43 — ☐ tens and ☐

☐ tens and ☐ = ☐

27 — ☐ tens and ☐

42 — ☐ tens and ☐

☐ tens and ☐ = ☐

Add by adding the tens and units separately.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11<br>12 | 21<br>14 | 32<br>12 | 46<br>11 | 24<br>31 | 16<br>12 | 26<br>51 | 35<br>20 | 64<br>24 | 13<br>13 |
| 15<br>14 | 16<br>13 | 27<br>12 | 45<br>21 | 62<br>17 | 12<br>12 | 36<br>12 | 35<br>34 | 21<br>20 | 26<br>32 |
| 23<br>23 | 32<br>15 | 18<br>10 | 21<br>30 | 41<br>17 | 15<br>14 | 38<br>21 | 22<br>11 | 35<br>31 | 46<br>12 |
| 34<br>34 | 25<br>40 | 42<br>32 | 51<br>41 | 70<br>12 | 60<br>24 | 23<br>24 | 24<br>12 | 72<br>27 | 45<br>23 |
| 30<br>40 | 40<br>25 | 71<br>11 | 81<br>10 | 56<br>12 | 64<br>11 | 14<br>14 | 42<br>23 | 48<br>11 | 44<br>12 |
| 37<br>11 | 33<br>23 | 24<br>32 | 15<br>13 | 15<br>10 | 25<br>14 | 55<br>12 | 66<br>12 | 22<br>22 | 43<br>23 |
| 41<br>53 | 62<br>13 | 43<br>41 | 23<br>14 | 34<br>24 | 21<br>41 | 76<br>11 | 33<br>11 | 41<br>21 | 55<br>21 |
| 35<br>22 | 32<br>23 | 41<br>14 | 62<br>15 | 81<br>11 | 54<br>35 | 24<br>24 | 64<br>10 | 80<br>10 | 47<br>21 |

# WORKBOOKS IN THIS SERIES

by Irving Adler, Ph.D.

## MATHEMATICS—GRADE 1

What numbers mean • How numbers are written • What order numbers come in (or how to count) • How to add • How to subtract • How to compare sizes (or what **tall, small, more,** and **fewer** mean) • What **pennies, nickels,** and **dimes** are (or how to use pennies, nickels, and dimes) • How to make change • How to tell the hours on a clock • What a **foot ruler** is • What **triangles, squares,** and **circles** are • What order the days of the week come in • What a **dozen** is.

## MATHEMATICS—GRADE 2

How to count up to 100 • How to add and subtract two-place numbers • How to work problems in your head • What **zero** means • What **half** and **fourth** mean • How to count money • What **quarters** are • How to read a thermometer • How to read a calendar • How to tell time in quarter hours.

## MATHEMATICS—GRADE 3

More about adding and subtracting • How to multiply • How to divide • What **third** means What **dollars** and **half dollars** are • How to use a dollar sign • More about calendars • More about thermometers • How to tell time at five-minute intervals • How to measure with a ruler.

## MATHEMATICS—GRADE 4

How to count up to 100,000 • How to add and subtract three-place numbers • How to multiply a three-place number • How to divide a two-place number • How to write fractions • How to add and subtract fractions • More about thermometers • What **Roman numerals** are • How to work with money up to five dollars • How to use **inches, feet,** and **yards** • How to use **pints, quarts,** and **gallons** • How to use **pounds** and **ounces** • More about clocks and calendars.

## MATHEMATICS—GRADE 5

What fractions are (what fraction means) • How to work with fractions • More about adding and subtracting • More about multiplying and dividing • More about Roman numerals • More about money • What **average** means • More about clocks and calendars (more about time) • More about weight • More about length.

## MATHEMATICS—GRADE 6

How to count up to 100,000,000,000 • More about adding and subtracting • More about multiplying and dividing • More about fractions • What **mixed numbers** are • What **decimals** are • How to use decimals • How to work with **rate, time,** and **distance** • How to find **area** • How to find **perimeter** • How to find **volume** • More about Roman numerals • Some laws of arithmetic.

Name _____

IN THIS WORKBOOK, I WILL LEARN:

how to count up to 100

how to add and subtract two-place numbers

how to work problems in my head

what zero means

what half and fourth mean

how to count money

what quarters are

how to read a thermometer

how to read a calendar

how to tell time in quarter hours

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